

CENTRE UNIVERSITAIRE D'INFORMATIQUE

ACTIVITY REPORT

2006



**UNIVERSITÉ
DE GENÈVE**

CENTRE UNIVERSITAIRE
D'INFORMATIQUE



UNIVERSITY OF GENEVA

Centre Universitaire d'Informatique

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cui.unige.ch

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Foreword

The **Centre Universitaire d' Informatique (CUI)**, one of the oldest computer research centers in the world, is proud to report its activities during 2006. The CUI is a multidisciplinary center dealing with different aspects of computing with members coming from different faculties of the University of Geneva. In particular, the Sciences, the Economics and the Letters Faculties provide the CUI with most of its member. This multidisciplinary aspect is also present in this report by means of significant applications, important publications and several projects in areas as far as Humanities and Biotechnology, Wireless Communication and Complexity Theory, Virtual Reality and Software Engineering to cite only a few of them.

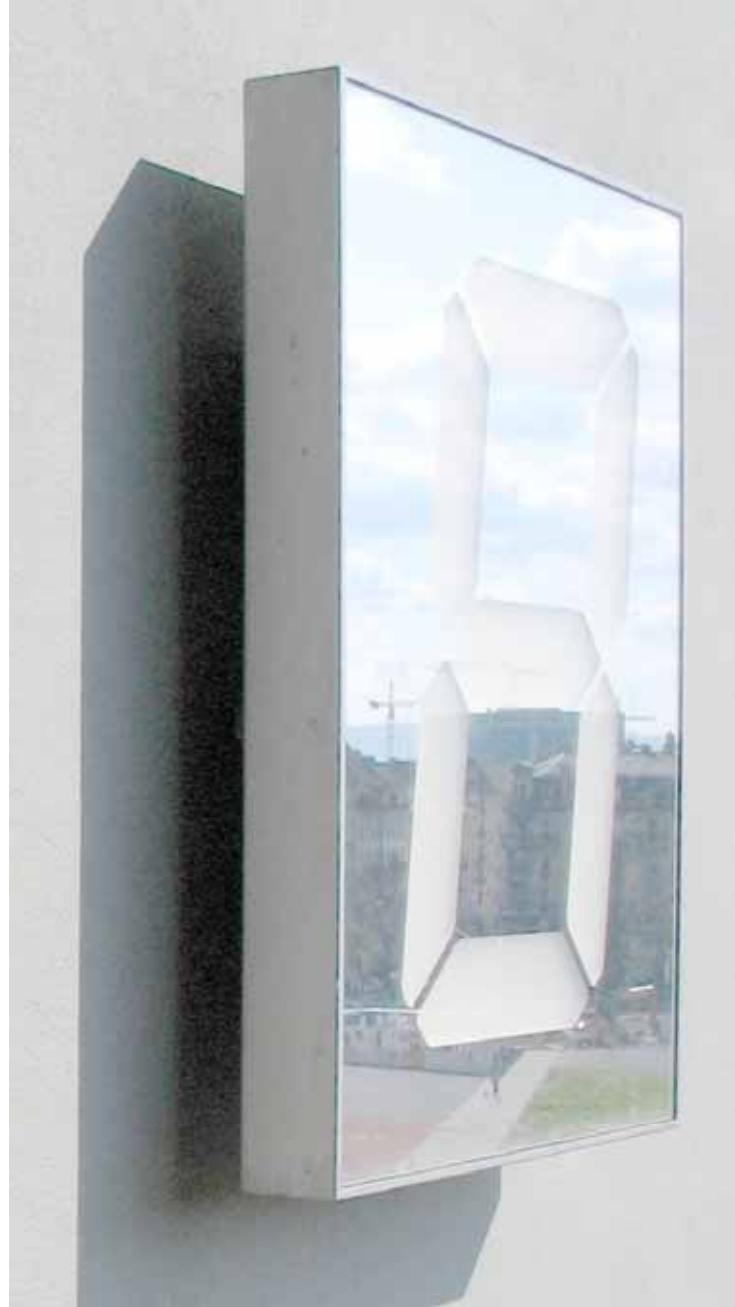
During 2006, the CUI obtained the support of several important research projects by the EU, by the Swiss National Foundation and by different industrial partners. These projects are described in this report. Also during 2006, the Scientific Advisory Board of the CUI examined and evaluated the activities of the several laboratories of our center and provided us with important feedback related to our future. The CUI is proud of the result of this evaluation and the consequences are detailed in this report as our main scientific activities.

As the new director of the CUI it is my pleasure to invite the reader to discover the several laboratories and research groups of our center and appreciate each of the activities developed during 2006.

Welcome to the CUI



José Rolim
Director of the CUI
University of Geneva



Advanced Systems Group

Prof. Dimitri Konstantas

ASG

DOMAIN ACTIVITIES

The main research direction of the group is the study of issues related with autonomous and mobile systems and Free and Open Source Software (F/OSS) processes for software production and distribution. More specifically the current research areas of the group are:

- Mobile applications: location based services and applications, mobile health applications and ambient intelligence;
- Free and Open Source Software : define a scalable and secure architecture for the packaging, testing and distribution of F/OSS;
- Security and resource management : formalization and implementation of a model based on the human notion of trust, with concepts such as “recommendations” and uncertainty;
- Digital Rights Management and Digital Policy Management: This research field covers the issue of persistent information protection. By persistently associating usage rules to content, it becomes possible to control the use of the content even outside the traditional perimeter based security.

Web: <http://asg.unige.ch>

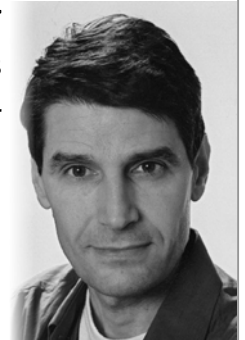


Path-trace in Geneva, made with the Bluetooth GPS API for mobile telephones, developed in the group (<http://www.universal-locator.com>)

TEAM

Director

Dimitri Konstantas
Full professor



Members

Dr. Ciarán Bryce, MER
Dr. Jean-Marc Seigneur, Post Doc
Dr. Jean-Henry Morin, CC
Dr. Lemonia Ragia, MA

Phd students

Michel Pawlak
Katarzyna Wac
Michel Deriaz
Alfredo Villalba

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Joerg Abendroth and Jean-Marc Seigneur “Leveraging the Trusted Platform Module for More Trustworthy P2P File Sharing Peer Software” Transactions on Communications Journal, WSEAS , January, 2007
- [2] Mick Jourdan, Laurent Daynès, Marcin Jarzeb, Ciaran Bryce, Grzegorz Czajkowski, “Scaling J2EE Application Servers with the Multi-tasking Virtual Machine”, Software Practice and Experience Journal, 36(3), March 2006

Full refereed papers in Conference Proceedings

- [3] Pierpaolo Dondio, Stephen Barrett, Stefan Weber and Jean-Marc Seigneur, “Extracting Trust from Domain Analysis: a Case Study on Wikipedia Project”, Proceedings of the International Conference on Autonomic and Trusted Computing, September, 2006
- [4] Michel Deriaz and Jean-Marc Seigneur, « Trust and Security in Spatial Messaging: FoxyTag, the Speed Camera Case Study”, Proceedings of the International Conference on Privacy, Security and Trust, October, 2006
- [5] Michel Deriaz and Jean-Marc Seigneur, “Towards Trustworthy Spatial Messaging”, in Proceedings of the Second International Workshop on Security and Trust Management, ERCIM, ENTCS, 2006.
- [6] Alfredo Villalba and Dimitri Konstantas, “Towards Hovering Information”, Proceedings of the Smart Sensing and Context, First European Conference, EuroSSC 2006, Enschede, Netherlands, October 25-27, 2006, Lectures Notes in Computer Science 4272 Springer 2006, Pag. 250-254
- [7] Rainer Herzog, Dimitri Konstantas, Richard Bults, Aart Van Halteren, Katarzyna Wac, Val Jones, Ing Widya, Barbara Streimelweger, "Mobile Patient Monitoring - applications and value propositions for personal health", Proceedings of pHHealth 2006, the International Workshop on wearable micro- and nanosystems for personalized Health, Luzern, Switzerland, January 30 - February 1, 2006.
- [8] Dimitri Konstantas, Richard Bults, Aart Van Hal-

teren, Katarzyna Wac, Val Jones, Ing Widya, Rainer Herzog, Barbara Streimelweger, “Mobile Health Care: Towards a commercialization of research results”, Proceedings of the 1st European Conference on eHealth – ECEH’06, October 12-13, 2006, Fribourg, Switzerland

- [9] Katarzyna Wac, Aart van Halteren, Dimitri Konstantas, “QoS-predictions service: infrastructural support for proactive QoS- and context-aware mobile services” (position paper), Second International Workshop on Context-Aware Mobile Systems (CAMS’06), Montpellier, France, Oct 31 - Nov 1, 2006 (In conjunction with OnTheMove Federated Conferences (OTM’06)), LNCS 4278, pp. 1924-1933, Springer Berlin / Heidelberg, 2006, ISBN 978-3-540-48273-4
- [10] Dimitri Konstantas, Ric Quartero, Rainer Herzog, “Mobile Health Monitoring: From Ideas to Product”, presentation in the The World of Health IT Conference & Exhibition 2006, 10-13 October 2006, Geneva, Switzerland

Books and book chapters

- [11] Jean-Marc Seigneur and Christian Jensen, Trust in E-services: Technologies, Practices and Challenges, Idea Group Publishing, ISBN 978-1599042077, January, 2007
- [12] Val Jones, Nadav Shashar, Oded Ben Shaphrut, Kevin Lavigne, Rienk Rienks, Richard Bults, Dimitri Konstantas, Pieter Vierhout, Jan Peuscher, Aart van Halteren, Rainer Herzog and Ing Widya, “Remote Monitoring for Healthcare and for Safety in Extreme Environments”, in M-Health: Emerging Mobile Health Systems, Robert H. Istepanian, Swamy Laxminarayan, Constantinos S. Pattichis, Editors, Springer 2006, pp.561-74. 624 p. ISBN: 0-387-26558-9 (ch.43)
- [13] Ing Widya, Peter Vierhout, Val M. Jones, Richard Bults, Aart van Halteren, Jan Peuscher, and Dimitri Konstantas, “Telematic Requirements for Emergency and Disaster Response derived from Enterprise Models”, in M-Health: Emerging Mobile Health Systems, Robert H. Istepanian, Swamy Laxminarayan, Constantinos S. Pattichis, Editors, Springer 2006, pp.531-48. 624 p. ISBN: 0-387-26558-9.(ch.41)

- [14] Val Jones, Aart van Halteren, Nikolai Dokovsky, George Koprnikov, Jan Peuscher, Richard Bults, Dimitri Konstantas, Ing Widya and Rainer Herzog, "MobiHealth: Mobile Services for Health Professionals", in *M-Health: Emerging Mobile Health Systems*, Robert H. Istepanian, Swamy Laxminarayan, Constantinos S. Pattichis, Editors, Springer 2006, pp.237-46. 624 p. ISBN: 0-387-26558-9. (ch.17)
- [15] Val Jones, Aart van Halteren, Ing Widya, Nikolai Dokovsky, George Koprnikov, Richard Bults, Dimitri Konstantas and Rainer Herzog, "MobiHealth: Mobile Health Services based on Body Area Networks", in *M-Health: Emerging Mobile Health Systems*, Robert H. Istepanian, Swamy Laxminarayan, Constantinos S. Pattichis, Editors, Springer 2006, (pp.219-36) 624 p. ISBN: 0-387-26558-9. (ch.16)
- [16] Ciaran Bryce, *Encyclopédie de l'informatique et des systèmes d'information (Chapitre: Les systèmes d'exploitation)*, Vuibert Publishing, December 2006

Research and technical reports

- [17] Dimitri Konstantas (editor), ASG 2006 yearly technical report "From objects to Mobile Systems and services", June 2006, <http://asg.unige.ch/publications/TR2006/index.html>
- [18] Michel Pawlak, Ciaran Bryce, A Reference Model for Open Source Project Management, EDOS Project Report, November 2006

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- Dimitri Konstantas
 - ◇ Membre du eMobility initiative de l'EU.
 - ◇ Founding member and associate director of the ERCIM eMobility WG
 - ◇ Expert evaluator for the Canadian National research foundation
 - ◇ Expert Evaluator for the Commission of the European Union
- Ciaran Bryce
 - ◇ ANR – Agence National de Recherche (France) : Member of Expert Committee

- Jean-Marc Seigneur
 - ◇ 2006, International expert reviewer for the French National Research Agency (ANR), France

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- Jean-Marc Seigneur : ACM Symposium on Applied Computing Trust Track, Co-chair, Dijon, France, 23-27, April, 2006

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- Dimitri Konstantas
 - ◇ I-ESA 06 conference, March 20-24, 2006, Bordeaux, France
 - ◇ ICISOFT 2006, 11-14 September, Setubal, Portugal
- Ciaran Bryce
 - ◇ International Workshop on Privacy and Security in Agent-based Collaborative Systems (PSACE 2006), Japan, May 2006
- Jean-Marc Seigneur
 - ◇ Autonomic and Trusted Computing, Wuhan, China, September, 2006
 - ◇ IEEE Infocom, Barcelona, Spain, April, 2006
 - ◇ International Conference on Availability, Reliability and Security, Vienna, Austria, March, 2006
 - ◇ International Conference on Privacy, Security and Trust, Toronto, Canada, October, 2006

INVITED TALKS

- Ciaran Bryce, A Project Reference Model for Open Source Projects, EDOS Workshop, at Rencontres Mondiales de Logiciel Libre, July 2006, Nancy
- Jean-Marc Seigneur, Web Intelligence, Web Ethic Track of the French Web Intelligence project, Computational Trust Overview, Valence, 12th of June 2006

FUNDED RESEARCH PROJECTS

Participation to European projects

Interop NoE

EU, IST-508011

Period: November 2003 - April 2007

Web: <http://www.interop-noe.org>

54 partners: prime partner University of Bordeaux

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EDOS

EU IST-004312

Period: November 2004 - April 2007

Web: <http://www.edos-project.org>

Partners: INRIA (F), Paris 7 University - UMR CNRS (F), Edge-IT (F), Caixa Magica (P), CSP Torino (I), Geneva University (CH), NEXEDI (F), NUXEO (F), Tel-Aviv University (IL), Zurich University (CH)

TECHNOLOGY TRANSFER

Collaboration with **ArxIT SA** for the deployment of Foxy-Tag and geolocalization services

OTHERS

Jean-Marc Seigneur

- ACM Certificate of Appreciation in appreciation for Contributions to the ACM SAC 2006 TRECK track, Podcasted by Tim Bell for IEEE Spectrum on Wikipedia trust

Michel Deriaz

- Radio and television interview for the presentation of the FoxyTag traffic information collaborative system (October, November 2006), TSR
- Newspaper article referring to the FoxyTag system: Tribune de Geneve and 24Heures (France), 21 November 2006.

Dimitri Konstantas

- Reviewer for the Information Systems Management special issue on IT in Healthcare, 2006

Michel Deriaz, Alfredo Villalba and Dimitri Konstantas, "Virtual Tags", Café Scientific au College de Bois Caran, November 20, 2006 (organised by M. Emmanuel Gripon)

TEACHING

- **Infrastructure de Communications**, Bachelor, 56 hours (winter semester), 27 students
- **Communication Multimédia**, Bachelor, 56 hours (spring Semester), 21 students
- **Outils Internet**, Bachelor, 56 hours (spring semester) 52 students
- **Programmation Objet**, Bachelor, 56 hours (spring semester) 16 students
- **Introduction to Mobile Systems and Services**, Master, 56 hours (winter semester), 12 students
- **Programmation des systèmes**, Master, 56 hours (winter semester) 16 students
- **Design of Multimedia Services**, Master, 56 hours (spring semester), 6 students



Computer Vision and Multimedia Laboratory

Prof. Thierry Pun

CVML

Computer Vision and Multimedia Laboratory

Prof. Thierry Pun

DOMAIN ACTIVITIES

The **Computer Vision and Multimedia Laboratory (CVML, <http://vision.unige.ch>)**, divided into three groups, carries out research in computer vision, multimedia data processing, management and security, as well as in multimodal human-machine interaction. Research applies to visual media such as text, audio, images and videos, to sounds, and to physiological signals.

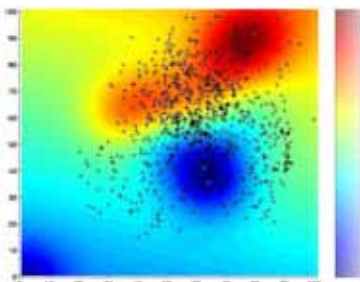
Content-based Visual Indexing and Retrieval group (Viper, Prof. S. Marchand-Maillet, <http://viper.unige.ch>): develops strategies for the efficient indexing retrieval and exploration of large multimedia databases. The group studies the complete chain of multimedia management from multimedia processing to content modeling, description and storage and interactive retrieval.

Stochastic Image Processing group (SIP, Prof. S. Voloshynovskiy, <http://sip.unige.ch>): studies various aspects of information theory and statistical (stochastic) visual data analysis and processing. Applications cover image compression, restoration and denoising, classification. A related research axis concerns analog and digital watermarking, authentication, tamper proofing. Current research also concerns brand protection using portable devices and wireless communications.

Multimodal Interaction group (MMI, Prof. T. Pun, <http://vision.unige.ch/MMI>): studies various forms of multimodal interaction between humans, computers, and environment. Some considered interaction modalities are haptic, auditory, and based on physiological signals such as EEG's. Current developments concern emotion recognition and its use for interaction, brain-computer interfaces, brain imaging, and mobility aids for sight handicapped people.

Web: <http://vision.unige.ch>

Learning relevance function
in a multimodal space



A blindfolded participant examining
coloured balloons with a stereoscopic camera



TEAM

Director

Thierry Pun
Full professor



Sviatoslav Voloshynovskiy
Associate professor



Stéphane Marchand-Maillet
Assistant professor



Members

Dr. Karim Ansari-Asl (since sept. 2006)

Dr. Eric Bruno

Dr. Oleksiy Koval

Dr. Nicolas Moenne-Loccoz

Dr. Romana Rytsar

Dr. Serge Kosinov

Phd students

Fokko Beekhof (since sept. 2006)

Guillaume Chanel

Benoit Deville

Bruno Janvier (until march 2006)

Jana Kludas (since july 2006)

Serge Kosinov

Julien Kronegg

Donn Morrison (since august 2006)

Eniko Szekely (since august 2006)

Emre Topak

José Vila Forcen (until april 2006)

Renato Villan

PhD THESIS

- José Vila Forcen, “Digital data-hiding based identification systems”, Thèse no. 3570, April 2006
- Julien Kronegg, “Mesure et optimisation des performances pour une interface de communication neuronale”, Thèse no. 3790, Sept. 2006

PARTICIPATION IN PhD JURYS

- Z. Hammal, “Segmentation des traits du visage, analyse et reconnaissance d’expressions faciales par les modèles de croyance transférable” (en anglais), Univ. Joseph Fourier, Grenoble, France (Dr. A. Caplier), Juin 2006 (T. Pun, jury member).
- J. Shen, “Advanced Query Processing on Large Multimedia Databases”. University of New South Wales, Australia, September 2006 (S. Marchand-Maillet as Assessor).
- F. Monay, “Learning the structure of Image Collections” with Latent Aspect Models. EPFL, December 2006 (S. Marchand-Maillet as Jury Member).

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] T. I. Alecu, S. Voloshynovskiy, T. Pun, “The Gaussian transform of distributions: definition, computation and application”, IEEE Trans. on Signal Processing, Vol. 54, No. 8, Aug. 2006, 2976-2985.
- [2] B. Janvier, E. Bruno, S. Marchand-Maillet, and T. Pun, “Information-theoretic temporal segmentation of videos and applications: multiscale keyframe selection and transition detection”, in *Multimedia Tools and Applications*, 273-288, 30, 2006.
- [3] O. Koval, S. Voloshynovskiy, J. Vila-Forcen, F. Perez-Gonzalez, F. Deguillaume and T. Pun, “Robustness improvement of known-host-state watermarking using host statistics”, Elsevier Science, *Signal Processing*, Volume 86, Issue 5, May 2006, Pages 1076-1088.
- [4] N. Moënné-Loccoz and B. Janvier and S. Marchand-Maillet and E. Bruno, “Handling temporal heterogeneous data for content-based management of large video collections”, in *Multimedia Tools and Applica-*

tions, 309-325, 31, 2006.

- [5] T. Pun, T. I. Alecu, G. Chanel, J. Kronegg, S. Voloshynovskiy, “Brain-computer interaction research at the Computer Vision and Multimedia Laboratory, University of Geneva”, IEEE Trans. Neural Systems and Rehabilitation Engineering, Special Issue on Brain-Computer Interaction, T. M. Vaughan and J. R. Wolpaw, Eds., Vol. 14, No. 2, June 2006, 210-213.
- [6] J. E. Vila-Forcén, S. Voloshynovskiy, O. Koval and F. Pérez-González and T. Pun, “Quantization-Based Methods: Additive Attacks Performance Analysis, LNCS Transactions on Data Hiding and Multimedia Security”, 2006.
- [7] J. Vila, S. Voloshynovskiy, O. Koval and T. Pun, “Facial Image Compression Based on Structured Codebooks in Overcomplete Domain”, *EURASIP Journal of Applied Signal Processing*, Volume 2006, Article ID 69042, 11 pages, 2006.
- [8] R. Villan, S. Voloshynovskiy, O. Koval, and T. Pun, Multilevel 2D Bar Codes: “Towards High Capacity Storage Modules for Multimedia Security Management”, IEEE Trans. on Information Forensics and Security, Volume 1, Number 4, December 2006, Pages 405-420.
- [9] S. Voloshynovskiy, O. Koval, F. Deguillaume and T. Pun, “Quality enhancement of printed-and-scanned images using distributed coding”, Elsevier Science, *Signal Processing*, Volume 87, Issue 6, June 2007, Pages 1301-1313.

Patent application

S. Voloshynovskiy, O. Koval, T. Pun, "Brands protection and product authentication using portable devices", US Patent Application US11/477,486, filed June 27, 2006.

Full refereed papers in Conference Proceedings

- [10] E. Bruno, N. Moënné-Loccoz, and S. Marchand-Maillet, “Asymmetric learning and dissimilarity spaces for content-based retrieval”, in *Proc. of International Conference on Image and Video Retrieval (CIVR)*, Tempe, AZ, 330-339, 2006.

- [11] G. Chanel, J. Kronegg, D. Grandjean, T. Pun, "Emotion assessment: Arousal evaluation using EEG's and peripheral physiological signals", Proc. Int. Workshop Multimedia Content Representation, Classification and Security (MRCS), Sept. 11-13, 2006, Istanbul, Turkey, B. Günsel, A. K. Jain, A. M. Tekalp, B. Sankur, Eds., Lecture Notes in Computer Science, Vol. 4105, Springer, 530-537.
- [12] B. Janvier, E. Bruno, S. Marchand Maillet, and T. Pun, Performance evaluation of a contextual news story segmentation algorithm, in Proc. SPIE Vol. 6073, 60730X, Multimedia Content Analysis, Management, and Retrieval, San Jose, CA, 6073, 2006.
- [13] S. Kosinov and S. Marchand-Maillet, Visual object categorization with indefinite kernels in discriminant analysis framework, in Proceedings of SPIE Photonics West, Electronic Imaging 2006, Multimedia Content Analysis, Management, and Retrieval 2006 (E122), San Jose, CA, 6073, 2006.
- [14] S. Kosinov, S. Marchand-Maillet, I. Kozintsev, C. Dulong and T. Pun, Dual diffusion model of spreading activation for content-based image retrieval, in 8th ACM SIGMM - International Workshop on Multimedia Information Retrieval, Santa Barbara, CA, USA, 2006.
- [15] O. Koval, S. Voloshynovskiy and T. Pun, Laplacian state estimation for channels with side information, In Proc. 27th Symposium on INFORMATION THEORY in the BENELUX, Noordwijk, The Netherlands, June 8-9, 2006.
- [16] O. Koval, S. Voloshynovskiy and T. Pun, Host communications for non-Gaussian state-dependent channels: Laplacian case, International Conference on Multimedia and Expo ICME 2006, July 9-12, Toronto, Canada.
- [17] O. Koval, S. Voloshynovskiy, T. Holotyak and T. Pun, Information-theoretic analysis of steganalysis in real images, 8th ACM Multimedia and Security Workshop, Geneva, Switzerland, 26-27 September, 2006.
- [18] N. Moenne-Loccoz, E. Bruno, and S. Marchand-Maillet, Local feature trajectories for efficient event-based indexing of video sequences., in Proc. of International Conference on Image and Video Retrieval (CIVR), Tempe, AZ, 82-91, 2006.
- [19] K. Moustakas, G. Nikolakis, D. Tzovaras, B. Deville, G. Bologna, I. Marras, J. Pavlek, "Multimodal tools and interfaces for the intercommunication between visually impaired and "deaf and mute" people", Proc. eINTERFACE 2006 Workshop, Dubrovnik, Croatia, July - August 2006.
- [20] Y. Rytsar, S. Voloshynovskiy, O. Koval, F. Deguillaume, S. Startchik and T. Pun, Tangible interactive system for document browsing and visualisation of multimedia data, In Proceedings of SPIE Photonics West, Electronic Imaging 2006, San Jose, USA, 2006.
- [21] A. Savran, K. Ciftci, G. Chanel, J. Cruz Mota, L. Hong Viet, B. Sankur, L. Akarun, A. Caplier and M. Rombaut, "Emotion Detection in the Loop from Brain Signals and Facial Images", Proc. eINTERFACE 2006 Workshop, Dubrovnik, Croatia, July - August 2006.
- [22] E. Topak, S. Voloshynovskiy, O. Koval, M. Haroutunian, J.E. Vila-Forcén and T. Pun, E-capacity and security analysis of data-hiding channels with geometrical attacks, In Proceedings of SPIE Photonics West, Electronic Imaging 2006, Security and watermarking of multimedia contents VIII, San Jose, USA, 2006.
- [23] J.E. Vila-Forcén, O. Koval, S. Voloshynovskiy, T. Pun, Performance analysis of non-uniform quantization-based data-hiding, In Proceedings of SPIE Photonics West, Electronic Imaging 2006, Security and watermarking of multimedia contents VIII, San Jose, USA, 2006.
- [24] J.E. Vila-Forcén, O. Koval, S. Voloshynovskiy, T. Pun, Asymmetric side information and non-noticeable Costa data-hiding, In Proceedings of SPIE Photonics West, Electronic Imaging 2006, Security and watermarking of multimedia contents VIII, San Jose, USA, 2006.
- [25] J.E. Vila, S. Voloshynovskiy, O. Koval and T. Pun, Costa problem under channel ambiguity, IEEE International Conference on Acoustics, Speech and Signal Processing, Toulouse, France, 14-19 May 2006.

- [26] R. Villan, S. Voloshynovskiy, O. Koval, J.E. Vila-Forcén, E. Topak, F. Deguillaume, Y. Rytsar, T. Pun, "Text Data-Hiding for Digital and Printed Documents: Theoretical and Practical Considerations", In Proceedings of SPIE Photonics West, Electronic Imaging 2006, Security and watermarking of multimedia contents VIII, San Jose, USA, 2006.
- [27] S. Voloshynovskiy, O. Koval, R. Villan, E. Topak, J.E. Vila-Forcén, F. Deguillaume, Y. Rytsar, T. Pun, "Information-theoretic analysis of electronic and printed document authentication", In Proceedings of SPIE Photonics West, Electronic Imaging 2006, Security and watermarking of multimedia contents VIII, San Jose, USA, 2006.
- [28] S. Voloshynovskiy, O. Koval, E. Topak and T. Pun, "Message communications and channel state estimation for state dependent channels", In Proc. 27th Symposium on INFORMATION THEORY in the BENELUX, Noordwijk, The Netherlands, June 8-9, 2006, 2006.
- [29] S. Voloshynovskiy, O. Koval, M. Lozynska, "Novel interactive services for e-tourism and e-commerce, ABAS2006", XVI International Conference Academy of Business and Administrative Sciences 2006, Montreux, Switzerland, July 21-23, 2006.
- [30] S. Voloshynovskiy, O. Koval, E. Topak, J. Vila-Forcén and T. Pun, "On reversibility of random binning based data hiding techniques: security perspectives", 8th ACM Multimedia and Security Workshop, Geneva, Switzerland, 26-27 September, 2006.
- [31] G. Bologna, B. Deville, M. Vinckenbosch, T. Pun, "Touching colour when being visually impaired", Similar NOE Workshop, June 8-9, 2006, Heraklion, Greece.
- [32] G. Bologna, B. Deville, T. Pun, M. Vinckenbosch, "Transforming 3D coloured pixels into musical instrument notes for vision substitution applications", Dec. 2006 (will appear in: *Eurasip J. of Image and Video Processing*, Special Issue: Image and Video Processing for Disability, 2007).
- [33] G. Bologna, B. Deville, M. Vinckenbosch, T. Pun, "Touching colour when being visually impaired", Similar NOE Workshop, June 8-9, 2006, Heraklion, Greece.
- [34] G. Chanel, J. Kronegg, D. Grandjean, T. Pun, "Emotion assessment using physiological signals", Similar NOE Workshop, June 8-9, 2006, Heraklion, Greece.
- [35] J. Kronegg, G. Chanel, S. Voloshynovskiy, T. Pun, "Information-transfer rate based performance optimization for brain-computer interfaces", Similar NOE Workshop, June 8-9, 2006, Heraklion, Greece.
- [36] J. Kronegg, "Goals, Problems and Solutions in Brain-Computer Interfaces: a Tutorial", bci-info.org research presentation, http://bci-info.org/Research_Info/documents/presentations/bci-tutorial-julien-kronegg/, 2006.
- [37] J. Kronegg, G. Chanel, S. Voloshynovskiy, T. Pun, "EEG-based synchronized brain-computer interfaces: a model for optimizing the number of mental tasks", Jan. 2006 (now in: *IEEE Trans. on Neural Systems and Rehabilitation Engineering*, Vol. 15, No. 1, March 2007, 50-58).
- [38] T. Pun, P. Roth, G. Bologna, D. Tzovaras, K. Moustakas, "Image and video processing for visually handicapped people", Dec. 2006.
- [39] R. Rytsar, T. Pun, "The forward EEG solutions: finite elements modelling of the dipole source", European Bioalpine Convention, October 6, 2006, Grenoble, France.
- [40] R. Rytsar, T. Pun, "Finite elements modelling of the dipole source in EEG", Diablerets 2006, Lemanic-Neurosciences Annual Meeting, September 8-9, 2006, Les Diablerets, Switzerland.

Books and book chapters

- [31] A. Schloegl, J. Huggins, J. Kronegg, and S. G. Mason, "Evaluation criteria in BCI research," in *Towards Brain-Computer Interfacing*, G. Dornhege, J. d. R. Millán, T. Hinterberger, D. J. McFarland, and K.-R. Müller, Eds. Cambridge, MA: The MIT Press, accepted for publication.

Research and technical reports

- [32] G. Bologna, B. Deville, T. Pun, M. Vinckenbosch, "Transforming 3D coloured pixels into musical instrument notes for vision substitution applications", Dec. 2006 (will appear in: *Eurasip J. of Image and*

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- T. Pun: Conseil d'administration du GRETSI - Groupe français de recherche et d'études en traitement du signal et des images (<http://www.gretsi.fr>).
- T. Pun: Membre du Steering Committee du Centre National de Compétences en Recherche NCCR-(IM)2 "Interactive Multimodal Information Management", dirigé par l'IDIAP, Martigny.
- S. Marchand-Maillet : direction du sous-projet « Multimodal Content Abstraction » du Centre National de Compétences en Recherche NCCR-(IM)2 "Interactive Multimodal Information Management", dirigé par l'IDIAP, Martigny
- S. Marchand-Maillet: Expert (project review) for "FWF Der Wissenschaftsfonds", Austrian Science Foundation.
- T. Pun: Expert (project review) for the Microsoft European Scholarship Program, 2006.
- S. Voloshynovskiy: Management Committee member of European Network of Excellence Ecrypt (<http://www.ecrypt.eu.org/>)

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- ACM Multimedia Security Workshop 2006, Geneva, Switzerland, Sept. 2006. (S. Voloshynovskiy as chair and O. Koval as co-chair and treasurer).
- 4th International Workshop on Adaptive Multimedia Information Retrieval (AMR 2006), Geneva, Switzerland, August 2006 (S. Marchand-Maillet as General Chair, E. Bruno as Program co-chair).
- ACM Workshop on Multimedia Information Retrieval (ACM-MIR, 2006), Santa Barbara, 2006 (S. Marchand-Maillet, Special session on Evaluating Multimedia Systems).
- MRCS2006, Workshop on Content Representation, Classification and Security, Istanbul, Turkey, December 2006 (S. Voloshynovskiy and O. Koval, Special session on Multimodal Signal Processing)

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- ICIP 2006, Int. Conf. Image Processing, Atlanta, USA, Oct. 2006.
- ACM Multimedia Security Workshop 2006, Geneva, Switzerland, Sept. 2006.
- ICPR 2006, Int. Conf. Pattern Recognition, Hong-Kong, Aug. 2006.
- WaCha2006, Second WAVILA Challenge, Geneva, Switzerland, September 28th, 2006.
- IWDW2006, International Workshop on Digital Watermarking 2006, Seoul, Korea, October 30 – November 1, 2006 .
- MRCS2006, Workshop on Content Representation, Classification and Security, Istanbul, Turkey, December 2006
- ABAS2006, XVI International Conference Academy of Business and Administrative Sciences 2006, Montreux, Switzerland, July 21-23, 2006.
- The 8th IASTED International Conference on SIGNAL AND IMAGE PROCESSING SIP 2006, August 14-16, 2006, Honolulu, Hawaii, USA.
- SPIE2006, Electronic Imaging 2006, Multimedia security and watermarking VIII, San Jose, USA, 2006.
- 4th International Workshop on Adaptive Multimedia Information Retrieval (AMR 2006), Geneva, Switzerland, August 2006
- IEEE International Conference on Image Processing (ICIP 2006), Atlanta, GA USA, 2006.
- ACM SIGIR'06 (SIG Conference on Information Retrieval), Seattle, WA, 2006.
- International Conference on Image and Video Retrieval (CIVR 2006), Tempe, AZ, 2006.
- 21st Annual ACM Symposium on Applied Computing (ACM-SAC 2006), Dijon, France, 2006.
- 3rd Joint Workshop on Multimodal Interaction and Related Machine Learning Algorithms (MLMI 2006), Washington DC, USA, 2006.
- 1st Workshop on Learning the Semantics of Audio Signals (LSAS 2006), Athens, Greece, 2006.
- ACM Multimedia 2006 (ACM SIG-MM International Conference), Santa Barbara, 2006
- ACM Workshop on Multimedia Information Retrieval (ACM-MIR, 2006), Santa Barbara, 2006

INVITED TALKS

- G. Chanel, J. Kronegg, D. Grandjean, I. Alecu, T. Pun, "Pattern recognition in peripheral and central signaling", Workshop on Multimodal synchronization in affective expressions, Humaine European NOE 3rd Summer School and Affective Sciences NCCR, September 22-24, 2006, Genova, Italy. Invited long presentation, presented by T. Pun and G. Chanel.
- O. Koval, S. Voloshynovskiy, F. Beekhof, T. Pun, Decision-theoretic consideration of robust perceptual hashing: link to practical algorithms, WaChaz007, Third WAVILA Challenge, Sant Malo, France, June 15th, 2007.
- S. Marchand-Maillet and M. Worring. Introductory lecture to the Special session on Evaluating Multimedia Systems . ACM Workshop on Multimedia Information Retrieval (ACM-MIR, 2006), Santa Barbara, 2006.
- S. Marchand-Maillet, "Multimodal Fusion for Content-based Retrieval and Management of Multimedia Data". Summer School on Multimedia Semantics. Chalkidiki, GR. September 2006. Invited lecture (3h).
- S. Marchand-Maillet, "Multimodal Fusion for Content-based Retrieval of Multimedia Data", CERN OpenLab seminar. University of Geneva, August 2006. Invited lecture (1h).
- S. Voloshynovskiy and O. Koval, Security of Printed Documents, Swiss National Bank, Zurich, January 19, 2007.

FUNDED RESEARCH PROJECTS

Participation to European projects

SIMILAR

Seamless integrated multimodal interfaces for learning and augmenting communication in the real world: The European taskforce in future human-machine interfaces research, FP6 - IST Priority Call 1 2002-2.3.1.6 "Multimodal interfaces", No. IST-2002-507.602

Period: December 2003 – November 2007

<http://www.similar.cc/>

ECRYPT

European network of excellence in cryptology, FP6 - IST Priority Call 1 2002-2.3.1.5 "Toward a global dependability and security framework", No. IST-2002-507.932

Period: February 2004 – January 2008

<http://www.ecrypt.eu.org/>

Cooperation with Intel Corp., USA: "Models for personalized semantic augmentation of digital media".

MultiMatch

Multilingual/MultiMedia Access to Cultural Heritage - IST FP6-STREP, No. IST-2006-033104

Period: May 2006 – October 2008

<http://www.multimatch.eu/>

Participation to National projects

Hasler Foundation

SeeColor

Seeing colors with an orchestra, No. MMI - 1968. Principal investigator: Prof. M. Vinckenbosch, Univ. of Applied Sciences/HES-SO, Geneva.

Period: Oct. 2005 – Sept. 2008

Swiss National Center of Competence in Research (IM)2 - Interactive Multimodal Information Management (Leading House: IDIAP Martigny)

Period: 2002 - 2009.

<http://www.im2.ch/>

FNRS-SNSF, Swiss National Science Foundation

Emotion-driven personalized content-based multimedia management

SNSF 200021-113274/1.

Period: March 2007 – February 2009

Intelligent multimedia description authoring framework

SNSF 200020-105282/1

Period: October 2004 – October 2006

Direct non-invasive Human Brain Machine Interfaces

SNSF 3152Ao-100745/1

Principal investigator: Dr. C. Michel, Neurology Clinic, Geneva University Hospital (with: J. Millan, T. Pun, S. Gonzalez Andino).

Period: April 2003 – April 2006

—

SNF Professorship grant "Stochastic detection of hidden data"

SNSF PP002-68653/1,

Period: April 2003 – April 2007

—

Information-theoretic document authentication and self-recovering based on digital data-hiding

SNSF 200021-111643

Period: September 2006 – August 2008

—

Collection Guide: Large scale multimedia information management

SNSF 200021-109377

Period: October 2006 – September 2008

—

Marie Heim-Vögtlin grant: Fast automatic normalization and computation of multiscale lead-field models for the EEG/MEG inverse problem

PMPD2-110193/1

Period: October 2005 – Septembre 2007-06-15

TECHNOLOGY TRANSFERT

Spin-off: Anteleon Imaging S.A.R.L. (founded August 2003, <http://www.anteleon.com/>), specialized in multimedia documents protection and management, watermarking, authentication and tamper proofing.

OTHERS

Editorial boards

- Eurasip International Journal on Image and Video Processing (Hindawi, <http://www.hindawi.com/journals/ijivp/>) (T. Pun)
- Computerized Medical Imaging and Graphics

(Elsevier/Pergamon, <http://ees.elsevier.com/cmig/>) (T. Pun).

- International Journal of Image and Graphics (World Scientific, <http://www.worldscinet.com/ijig/mkt/editorial.shtml>) (S. Voloshynovskiy)

- EURASIP Journal on Information Security (Eurasip IJIS) (<http://www.hindawi.com/GetJournal.aspx?journal=IS>) (S. Voloshynovskiy)

Special issues

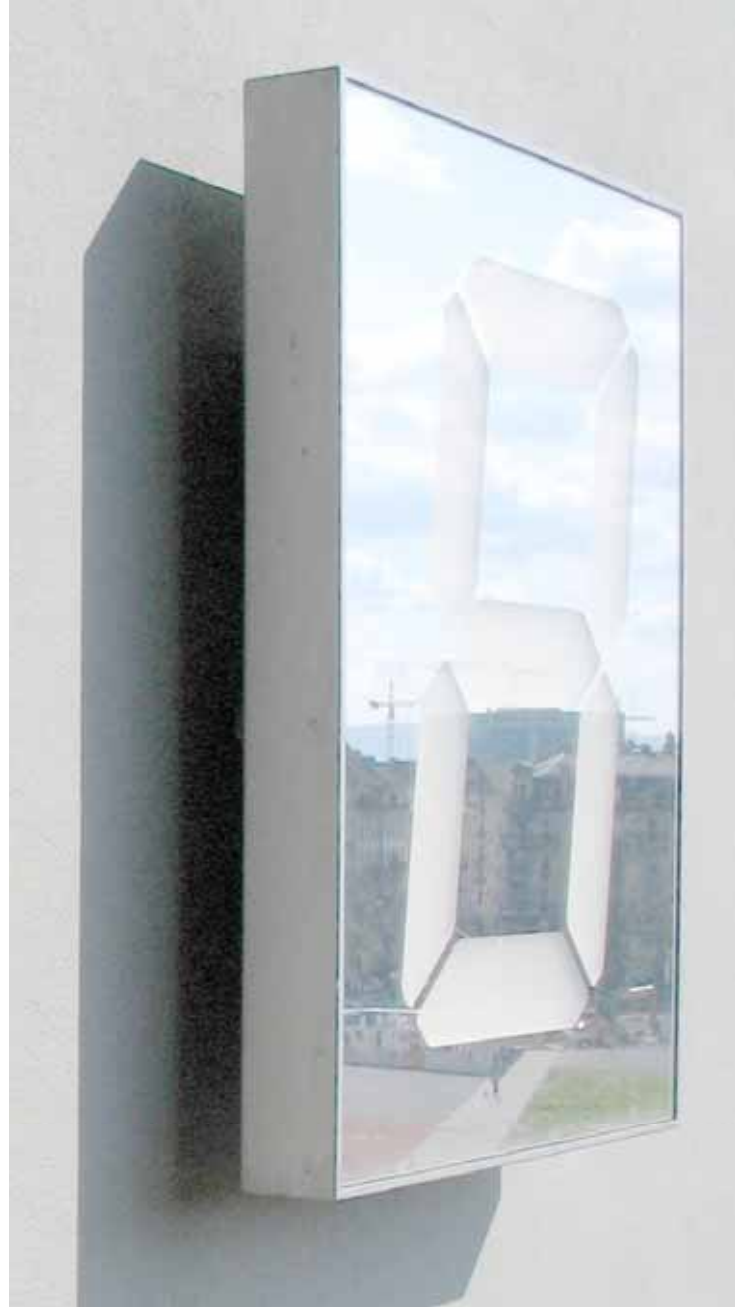
- International Journal of Image and Video Processing, 2007, Special Issue on "Image processing and disabilities", Guest Editor: A. Caplier, T. Pun, D. Tzovaras.
- EURASIP Journal on Information Security (Eurasip IJS), 2007 Special issue on Robust Hashing (2007), Guest Editor: K. Mihcak, O. Koval, S. Voloshynovskiy. (<http://www.hindawi.com/journals/is/si/rph.html>)

Refereeing/reviewing

- Journals, conferences, national funding organizations for various countries.
- Journée des Collégiens, Presentation of the Computing Science Department for High-School students, Talk on "Nouvelles interfaces humain-machine: interaction multimodale", Sept. 20, 2006.
- RSR 1, Radio Suisse Romande, Interview, Mordicus, "A quoi ressemblera l'homme de demain?", by Nancy Ypsilantis, Interview of T. Pun by Emmanuel Gripon, May 25, 2006.

TEACHING

- **Introduction to computer science**, Pharmaceutical Sciences, 1st year Bachelor, 14h. course and 28h. practical work, approx. 40 students.
- **Applied cybernetics**, Computer Science, Master, with Prof. C. Pellegrini and Dr. E. Bruno, 56h. course, 56h practical work, approx. 10 students. This course ends with a Lego Mindstorm robotcup competition which involves participants from several Universities and from the Geneva University of Applied Sciences.
- **Introduction to computer science**, Biology, 2nd year Bachelor, 28h. course et 2 x 56h. practical work, approx. 40 students.
- **Digital image processing and synthesis**, Computer Science, 3rd year Bachelor, optional for Master and postgraduate students, 56h. course and 56h. practical work, approx. 15 students.
- **Avanced image processing**, Computer Science, Master, postgrades, 28h. course and 28h. practical work, approx. 7 students.
- **Elements of information theory**, Computer Science, 2nd year Bachelor, Master, postgrades, 28h. course and 28h. practical work, approx. 25 students.
- **Multimedia security**, Computer Science, Master, postgrades, 28h. course and 28h. practical work, approx. 10 students.
- **Elements of multiuser information theory and wireless communications**, Science, Master, post-grades, 28h. course and 28h. practical work, approx. 12 students.
- **Data Structures**, Computer Science, 1st year Bachelor, 56h. course and 56h. lab work, approx. 15 students.
- **Hands-on Programming (practical complement to Data Structures)** , 1st year Bachelor. 56h Practical work, 15 students.
- **Computer Science Project**, Computer Science, 3rd year Bachelor, 28h course and 56h. lab work, approx. 15 students.
- **Multimedia Information Retrieval**, Computer Science, Master, postgrades, 28h. course and 28h. practical work, 7 students.
- **Industrial Internships**, Summer Semester (3 months supervision), 5 students.
- **Weekly Computer Vision and Multimedia seminars**, graduate students and senior researchers, 1h. per week, about 15 PhD students, post-docs, seniors, visitors.
- **Data Analysis and Pattern Recognition**, Computer Science, Master, Postgrades, 28 hours course and 28 hours practical work, 5 students.



Geneva Artificial Intelligence Laboratory

Prof. Christian Pellegrini

GAIL

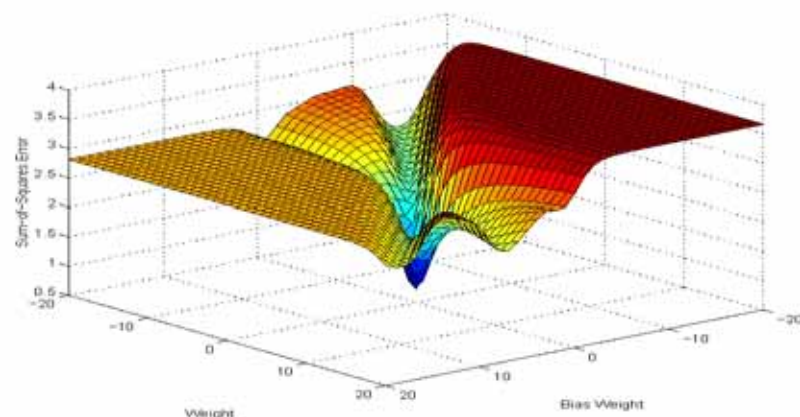
cui.unige.ch/Al-group

DOMAIN ACTIVITIES

The Geneva Artificial Intelligence Laboratory (GAIL) was established in 1980 to conduct research in both theoretical and applied artificial intelligence. Past research projects have dealt with the theory of knowledge representation and reasoning mechanisms, theoretical aspects of hybrid neuro-symbolic systems, knowledge representation and interpretation for various artificial neural network (ANN) architectures, new learning algorithms for ANNs, and meta-learning for algorithm and model selection.

Current research activities focus on advanced machine learning and data mining techniques (e.g., relational kernel-based learning for complex structures), natural language processing and text mining, information retrieval and information extraction. Research results have been applied to various problems in the life sciences (bioinformatics), such as the processing and classification of mass spectra, disease biomarker discovery, and biological text mining for proteomics database annotation.

Web: <http://cui.unige.ch/AI-group/>



TEAM

Director

Christian Pellegrini

Full professor



Members

Dr. Mélanie Hilario, MER

Dr. Alexandros Kalousis, MA

Phd students

Frédéric Ehrler

Jee-Hyub Kim

Julien Prados

Ivan Titov

Adam Woznica

Antonio Jimeno Yepes

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Gilles Cohen, Mélanie Hilario, Hugo Sax, Stéphane Hugonnet, Antoine Geissbuhler, « Learning from imbalanced data in surveillance of nosocomial infection », *Artificial Intelligence in Medicine*, Elsevier, Vol. 37, pages 7-18, 2006
- [2] Mélanie Hilario, Alexandros Kalousis, Christian Pellegrini, Markus Müller, « Processing and Classification of Protein Mass Spectra », *Mass Spectrometry Reviews*, Wiley, Vol. 25, No. 3, pages 404-449, May-June, 2006
- [3] Alexandros Kalousis, Julien Prados & Mélanie Hilario, « Stability of Feature Selection Algorithms: a study on high dimensional spaces », *Knowledge and Information Systems*, Published online December, 2006

Full refereed papers in Conference Proceedings

- [4] Mélanie Hilario, Claire Nédellec (Eds.), « Proceedings of the ECML/PKDD Workshop on Data and Text Mining for Integrative Biology », Berlin, Germany, September 2006
- [5] Julien Prados, Alexandros Kalousis, Mélanie Hilario, « On Preprocessing of SELDI MS Data and its Evaluation », *Proc. 19th IEEE International Symposium on Computer-Based Medical Systems (CBMS-2006)*, IEEE Computer Society, Salt Lake City, USA, 2006
- [6] Ivan Titov and James Henderson, « Loss Minimization in Parse Reranking », *Proc. Conference on Empirical Methods in Natural Language Processing (EMNLP-06)*, Sydney, Australia, 2006
- [7] Ivan Titov and James Henderson, « Porting Statistical Parsers with Data-Defined Kernels », *Proc. 10th Conference on Computational Natural Language Learning (CoNLL-X)*, New York, USA, 2006
- [8] Adam Woznica, Alexandros Kalousis, Mélanie Hilario, « Kernels on lists and sets over relational algebra structures. Application to classification of protein fingerprints », *Advances in Knowledge Discovery and Data Mining. Proc. 10th Pacific-Asia Conference (PAKDD-06)*, Singapore, Springer, pages: 546-551, 2006

- [9] Adam Woznica, Alexandros Kalousis, Mélanie Hilario, « Matching Based Kernels for Labeled Graphs », *ECML/PKDD Workshop on Mining and Learning with Graphs (MLG 2006)*, Berlin, Germany, 2006
- [10] Adam Woznica, Alexandros Kalousis, Mélanie Hilario, « Distances and (Indefinite) Kernels for Sets of Objects », *The IEEE International Conference on Data Mining (ICDM-2006)*, Hong Kong, IEEE Computer Society, 2006
- [11] Adam Woznica, Alexandros Kalousis, Thomas Wacinski, Mélanie Hilario, « Learning Relational Distances », *International Conference on Inductive Logic Programming (ILP-2006)*, Santiago, Spain, 2006

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- Christian Pellegrini, 1.3.1998 — present, Member of the Foundation Council, Swiss Institute of Bioinformatics, Geneva
- Christian Pellegrini, 1.1.2003 – present, Member of the Foundation Council, IDIAP research Institute, Geneva
- Christian Pellegrini, 1.10.1987 — present, Member of the Scientific Committee of the “Diplôme Universitaire en Information Documentaire (CESID)”, University of Geneva, Geneva

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- Mélanie Hilario, *ECML/PKDD-2006 Workshop on Data and Text Mining for Integrative Biology*, Chair, Berlin, Germany, September 2006

MEMBER OF CONFERENCE PROGRAM COMMITTEES AND REVIEWING PANELS

- Mélanie Hilario, European Conference on Machine Learning/Principles and Practice of Knowledge Discovery in Data (ECML/PKDD-2006), Berlin, Germany, September 2006
- Mélanie Hilario, 8th International Conference on Data Warehousing and Knowledge Discovery (DaWak-2006), Krakow, Poland, September 2006
- Alexandros Kalousis, European Conference on Machine Learning/Principles and Practice of Knowledge Discovery in Data (ECML/PKDD-2006), Berlin, Germany, September, 2006

Period: April 2005 – March 2007

Partners: Clinical Chemistry Central Laboratory, Geneva University Hospital

ProDoTT

Learning Probabilistic First-Order Domain Theories from Text (FN 20021-109500/1)

Period : October 2005 – May 2007

Partners: Clinical Chemistry Central Laboratory, Geneva University Hospital

KernelStructParse

Kernel-Based Structure Processing for Natural Language Parsing (FN 200020-109685/1)

Period: November 2005 – October 2007

Afric@Home

Volunteer Computing for Africa

Period: August 2006 – July 2007

INVITED TALKS

- Alexandros Kalousis, A Unifying Framework for Relational Distance-Based Learning Founded on Relational Algebra, Computer Science Department, University of Athens, February 2006
- Alexandros Kalousis, Mass Spectrometry Based Biomarker Discovery in Proteomics, Third Summer School on Emerging Technologies in Biomedicine, Patras, Greece, July 2006

FUNDED RESEARCH PROJECTS

Participation to European projects

BioMint

Biological Text Mining (European project QLRI-CT-2002-02770, FP5, OFES No. 02.0126-2)

Period: January 2003 – March 2006

Partners: University of Manchester (UK), University of Antwerp (B), Austrian Research Institute for Artificial Intelligence (A), University of Geneva, Swiss Institute of Bioinformatics (CH), PharmaDM NV (B).

Website: <http://www.biomint.org>

FUNDED RESEARCH PROJECTS

Participation to National projects

KernRel

Local, Global and Statistical Approaches for Kernels on Relational Structures (FN 200020-107926/1)

OTHERS

Refereeing

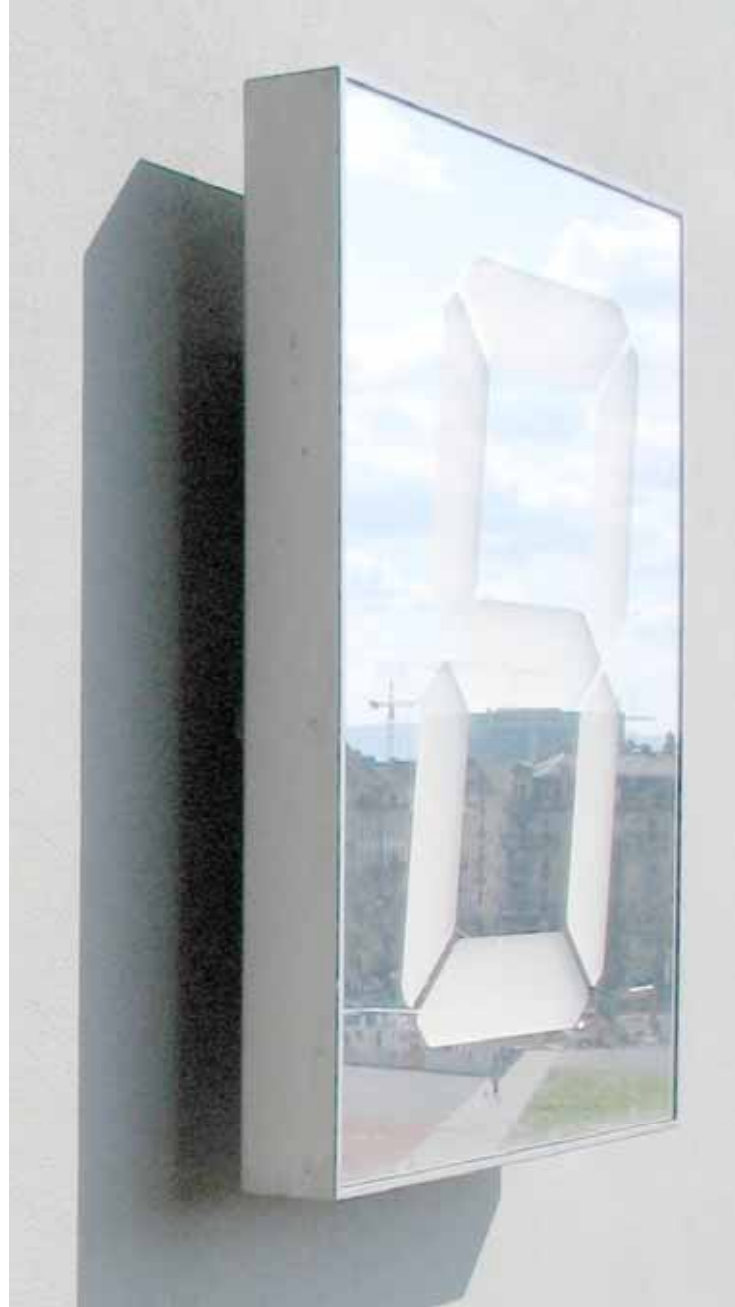
- Mélanie Hilario: BMC-Bioinformatics Journal
- Antonio Jimeno: DaWak-2006, ECML/PKDD-2006
- Jee-Hyub Kim: ECML/PKDD-2006
- Julien Prados: DaWak-2006
- Ivan Titov: DaWak-2006, ECML/PKDD-2006
- Adam Woznica: DaWak-2006, ECML/PKDD-2006

Editorial responsibilities

- Mélanie Hilario, Associate Editor of the International Journal on Artificial Intelligence Tools (IJAIT), World Scientific Publishing.
- Mélanie Hilario, Member, Editorial Board, Intelligent Data Analysis (IDA), IOS Press

TEACHING

- **Introduction to Algorithms**, Christian Pellegrini, Bachelor, 26 hours per year
- **Introduction to Artificial Intelligence**, Christian Pellegrini, Bachelor, 52 hours per year
- Christian Pellegrini also participates in the following courses: **Applied Cybernetics** (Prof. T. Pun), **Heuristic Methods of Learning and Optimization** (Prof. B. Chopard and M. Tomassini), **Object-Oriented Concepts and Languages** (Prof. P. Dugerdil).
- **Data Mining**, Melanie Hilario, Master, 52 hours per year



Information System Interfaces

Prof. Gilles Falquet

ISI

Information System Interfaces

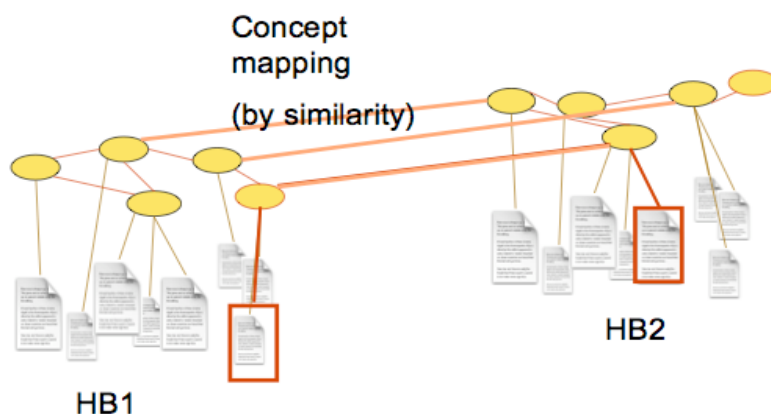
Prof. Gilles Falquet

DOMAIN ACTIVITIES

Current research directions of the ISI group include:

- Models and tools to develop and maintain multi-point of view ontologies;
- Models and systems for managing virtual documents, in particular virtual hyperbooks and digital libraries of hyperbooks;
- Knowledge intergration: integrating heterogeneous knowledge sources such as texts, maps, 3D models, dictionaris, formal ontologies; managing repositories of formal ontologies;
- Knowledge-based information retrieval systems;
- The specification of spatial (3D) hypertext interfaces and the modelling of adaptivity in 3D interfaces.

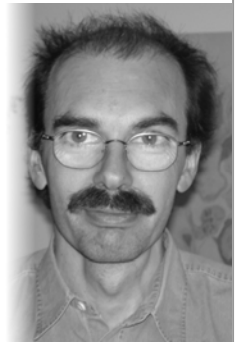
Web: <http://cui.unige.ch/isi/>



TEAM

Director

Gilles Falquet
Associate professor



Members

Dr. Jacques Guyot
Luka Nerima

Phd students

Claire-Lise Mottaz
Jean-Claude Ziswiler
El Mustapha El Afiti
Saïd Radhouani
Gabriela Tissiani
Kaveh Bazargan

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Benslimane, D., Arara, A., Falquet, G., Maamar, Z., Thiran, P., Gargouri, F. "Contextual Ontologies: Motivations, Challenges, and Solutions", in Proc. Advances in Information Systems Conf, LNCS, Springer, 2006.
- [2] Falquet, G., Nerima, L., Mottaz Jiang, C.-L., Ziswiler, J.-C. "Building Integrating Semi-formal Knowledge Organization Structures", 5th European Networked Knowledge Organization Systems (NKOS) Workshop at the 10th European Conference on Digital Libraries (ECDL 2006), Alicante, Spain, September 21, 2006.
- [3] Radhouani, S. and Falquet, G. "Using External Knowledge to Solve Multi-Dimensional Queries", in Proc. 13th Intl Conf. on Concurrent Engineering Research and Applications (CE 2006), Antibes, Sept. 2006. IOS Press.
- [4] Guyot, J., Falquet, G., Benzineb, K. "Construire un moteur d'indexation", Technique et science informatique (TSI), Hermes, Paris. À paraître. 2006.
- [5] Guyot, J., Radhouani, S. and Falquet, G., "Conceptual Indexing for Multilingual Information Retrieval", In Accessing Multilingual Information Repositories: 6th Workshop of the Cross-Language Evaluation Forum, CLEF 2005, Vienna, Austria, Revised Selected Papers. C. Peters, et al. (Eds.). Lecture Notes in Computer Science, Vol. 4022, Springer (forthcoming).
- [6] Chevallet, J.-P., Lim, J.-H. and Radhouani, S., "A Structured Visual Learning Approach Mixed With Ontology Dimensions For Medical Queries", In Accessing Multilingual Information Repositories: 6th Workshop of the Cross-Language Evaluation Forum, CLEF 2005, Vienna, Austria, Revised Selected Papers. C. Peters, et al. (Eds.). Lecture Notes in Computer Science, Vol. 4022, Springer (forthcoming).
- [7] Radhouani, S., Maisonnasse, L., Lim, J.-H. , Le, T.-H.-D. and Chevallet J.-P., "Une Indexation Conceptuelle pour un Filtrage par Dimensions, Expérimentation sur la base médicale ImageCLEFmed avec le méta thésaurus UMLS", in Proc. CONFérence en Recherche Information et Applications CORIA'2006, Lyon France, 15 - 17 mars, 2006.
- [8] Radhouani, S., Lim, J.-H., Chevallet, J.-P. and Falquet,

G., "Combining Textual and Visual Ontologies to Solve Medical Multimodal Queries", in Proc. IEEE Int. Conf. on Multimedia and Expo (ICME 2006), Toronto, Canada, 9-12 July, 2006.

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- Gilles Falquet, member of the « comité scientifique de la revue Techniques et Sciences Informatiques (TSI) », Paris, since 2003
- Gilles Falquet, member of the management committee of the COST C21 "Towntology" European Action
- Gilles Falquet, coordinator for Switzerland of the COST Action C21, 4 Swiss partners, total budget CHF 800'000, 2006-2008

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- Co-chair of the 1st Workshop on "Ontologies for Urban Development: Interfacing Urban Information Systems", 6,7 November 2006 - University of Geneva

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- Comité scientifique de la conférence Extraction et Gestion de la Connaissance EGC'06 (Lille)
- Program committee of the Special track on Web technologies at ACM SAC'07 (Seoul)
- Program committee of the 1st conf. on Ontologies for Urban Development: Interfacing Urban Information Systems

FUNDED RESEARCH PROJECTS

Participation to European and/or national projects

Integrating Urban Knowledge into 3D City Models within COST Action C21 "Towntology"

Period: 2006 - 2008

Swiss partners : EPF Lausanne, University of Zurich, University of Geneva (geography)

European partners in Belgium, France, Italy, Spain, Norway, Finland, UK, Romania

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Ontology-Based Precise Multilingual Information

Retrieval (FNS)

Period: 2006 - 2007

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BATICS project

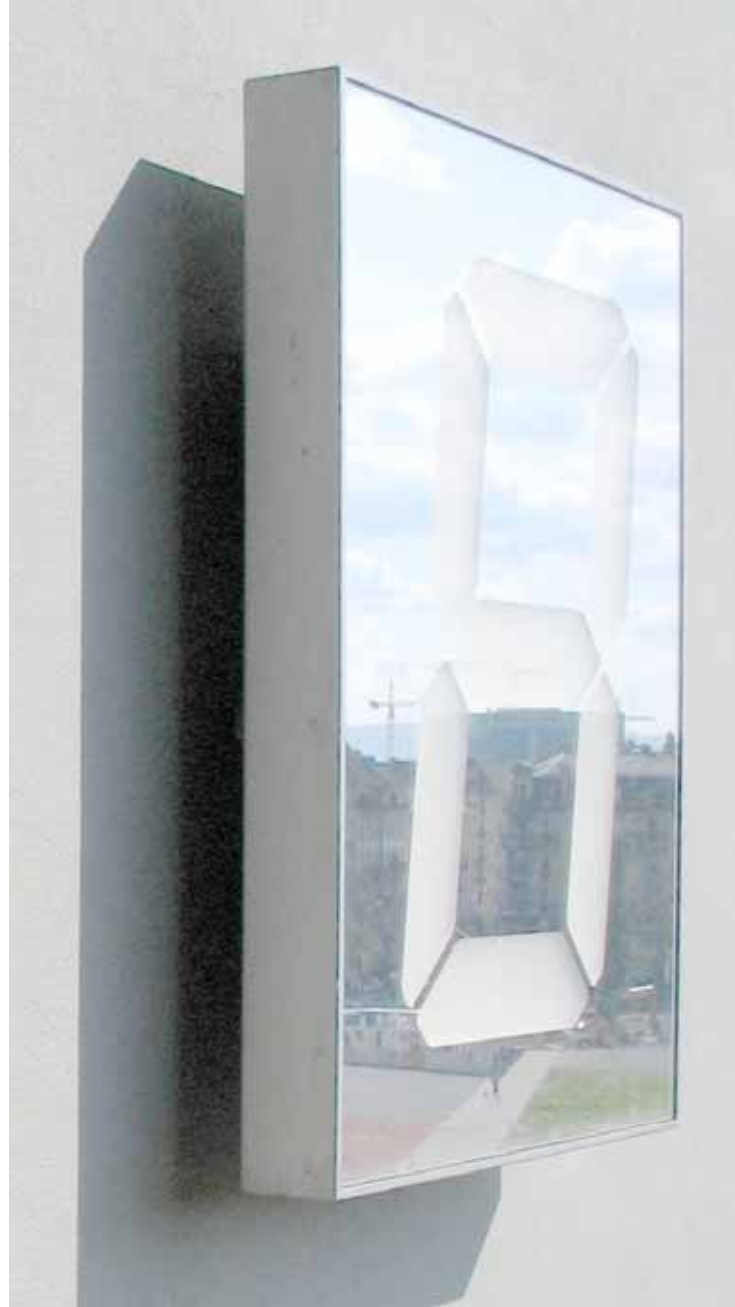
(co-direction with D. Buchs, see SMV for details)

OTHERS

- Invitation by the IFIM Informatique institute in Brazzaville to define a bachelor programme in Information systems (the first BSc. in IS in Congo).

TEACHING

- **Outils formels pour les systèmes d'information**, Information systems, Bachelor, 56 hours, 19 students
- **Algorithmes et structures de données**, Information systems, Bachelor, 56 hours, 18 students
- **Systèmes de représentation des connaissances : principes et applications**, Information systems, Master, 56 hours, 10 students
- **Interfaces des systèmes d'information**, Information systems, Master, 56 hours, 16 students
- **Nouvelles technologies du Web**, Information systems, Continuing education, 120 hours, 18 students
- **Introduction à UML**, Information systems, Continuing education, part of the Certificat de formation continue en informatique médicale (CFCU), 18 hours, 24 students



Laboratory for the Analysis and Technology of Language

Prof. Eric Wehrli

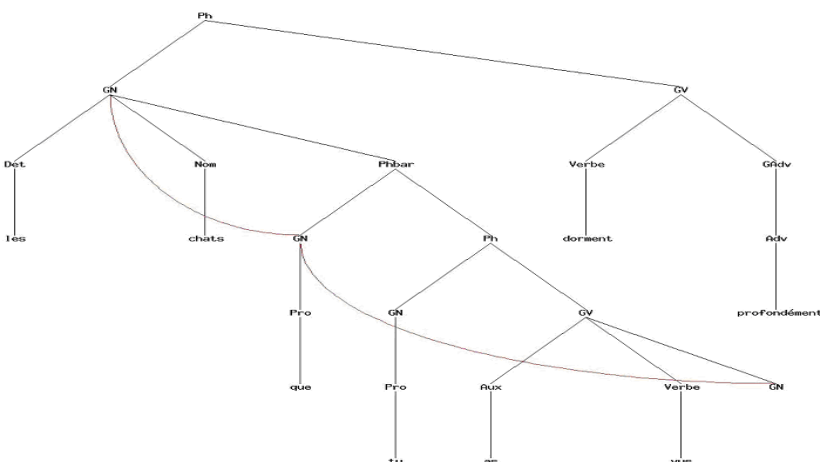
LATL

www.latl.unige.ch

DOMAIN ACTIVITIES

The LATL develops research and prototypes for several facets of natural language processing. The main areas of research are automatic analysis of sentence structure (parsing) and its meaning, and the development of lexicons and dictionaries. Parsing is at the core of several applications: text-to-speech, terminological extraction, computer-assisted language learning, text mining, and automatic translation. The successful performance of these applications lies in accurate, extensive and detailed information about words. We study machine learning techniques for learning dictionaries, and parse text to automatically treat collocations (fixed sequences of words) to support translation. The systems developed at LATL span several languages: French, English, German, Italian, and other languages are underway (Greek, Spanish, Japanese, and Arabic). We have recently extended our investigations to shallow levels of meaning representations.

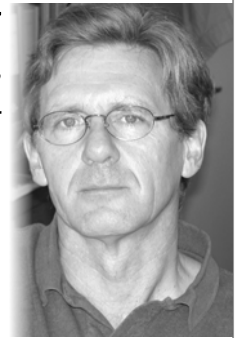
Web: <http://www.latl.unige.ch>



TEAM

Director

Eric Wehrli,
Full professor



Members

Dr. Paola Merlo, MER
Luka Nerima, CE

Phd students

Jean-Philippe Goldman
Antonio Leon di Leoni
Sébastien L'Haire
Athina Michou
Gabriele Musillo
Mar Ndivae
Yves Scherrer
Violeta Seretan

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Paola Merlo and Eva Esteve Ferrer "The Notion of Argument in PP Attachment", *Computational Linguistics*, 32(3), 341–378.
- [2] Luka Nerima, Violeta Seretan, and Eric Wehrli, « Le problème des collocations en TAL », *Nouveaux cahiers de linguistique française*, 27, 95–115.

Full refereed papers in Conference Proceedings

- [3] Leoni de LEÓN, J. A. et MICHOU, A. (2006), "Traitement des clitiques dans un environnement multilingue", *Taln 2006, Actes de la 13e conférence sur le traitement des langues naturelles*, pages 541–550, Louvain.
- [4] Violeta Seretan and Eric Wehrli, "Accurate collocation extraction using a multilingual parser", *Proceedings of the 21st International Conference on Computational Linguistics and 44th Annual Meeting of the Association for Computational Linguistics (COLING/ACL 2006)*, Sydney, Australia, pages 953–960, July, 2006
- [5] Violeta Seretan and Eric Wehrli, "Multilingual collocation extraction: Issues and solutions", *Proceedings or COLING/ACL Workshop on Multilingual Language Resources and Interoperability*, Sydney, Australia pages 40–49, July, 2006
- [6] Gabriele A. Musillo and Paola Merlo, "Robust Parsing of the Proposition Bank", *Proceedings of the Fourth International EACL-2006 Workshop: Robust Methods in Analysis of Natural Language Data (ROMAND'06)*, Trento, Italy, April 2006.
- [7] Gabriele A. Musillo and Paola Merlo, "Accurate Parsing of the Proposition Bank", *proceedings of Human Language Technology Conference and North American chapter of the Association for Computational Linguistics (HLT-NAACL'06)*, New York City, USA, June 2006.

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- Paola Merlo, Member of the Executive Board for the European Chapter of the Association for Computa-

tional Linguistics, 2006--2008.

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- Violeta Seretan, Co-chair of the Student Research Workshop, EACL 2006, Trento, Italy, April, 2006
- Paola Merlo, Area chair, Semantics, EMNLP 2006, Sydney Australia, August 2006.

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- Violeta Seretan, programme committee member of the 4th International workshop on ROBUST Methods in Analysis of Natural language Data, Held as an EACL 2006 Workshop (ROMAND 2006), Trento, Italy, April, 2006
- Violeta Seretan, programme committee member of the COLING/ACL Workshop on Multiword Expressions, Sydney, Australia, July, 2006.
- Gabriele Musillo Programme committee member for the Student Research Workshop at the 11th Annual Meeting of the European Chapter of the Association for Computational Linguistics (EACL'06), Trento, Italy, April 2006.
- Paola Merlo, Programme committee member for the Third International Workshop on Prepositions, Trento, Italy, April, 2006.

INVITED TALKS

- Paola Merlo, Accurate Parsing of the Proposition Bank, Edinburgh NLP seminar, Feb. 2006.
- Eric Wehrli, Talks on NLP and Translation at the University of Siena, University of Naples, Johns Hopkins University and Microsoft Research.
- Luka Nerima, Collaborative Writing of a Hyperbook on Information and Communication Technologies, DIRO - Université de Montréal, December 2006.

FUNDED RESEARCH PROJECTS

Participation to National projects

Learning verb meaning with hidden grammars

NFS Grant 100011-114044 2006-2008

Paola Merlo, Principal Investigator

Experiments in Parsing Recombination,

Hasler foundation

Paola Merlo, Principal Investigator

Weakly Supervised Learning of Verb Meaning

NFS Grant 100011-105286/1, 2004- 2006

Paola Merlo, Principal Investigator

Développement d'un modèle plurilingue de traitement des langues naturelles

NSF grant 101412-103999, 2004-2006,

Eric Wehrli

Multilingual Translation Model Based on Object Oriented Programming

FNS 100012-113864

Eric Wehrli

TECHNOLOGY TRANSFER

LATL.ch is a technology start-up specialized in the development of linguistic software components. Closely associated with LATL laboratory, LATL.ch develops and commercializes products based on fundamental research conducted in the university lab. Two companies involved in Speech synthesis use its phonetiser: Acapela Group, a European group, and SVOX, a start-up located in Zürich.

OTHERS

Honours and scientific awards

- Gabriele Musillo, Swiss National Science Foundation Doctoral Fellowship (CSAIL MIT), 2007-2008.

Public exhibitions and performances

- "Le temps d'une découverte", event organised by Service de Presse, Information et Publications, University of Geneva, 15 November 2006

Editorial responsibilities

- Paola Merlo member of the editorial board of Computational Linguistics, MIT Press.
- Editor of the Journal of Logic, Language and Information, Springer Verlag.

TEACHING

- **Informatique I – Introduction à l'algorithmique et à la programmation**, Bachelor, 10-20 students, 72 hours per year (seminar and laboratory sessions)
- **Informatique II : Programmation et structures de données (BA3a)**, Bachelor, 6 students, 56 hours per year
- **Informatique II : Projet de programmation orientée objet (BA3b)**, Bachelor, 8 students, 28 hours per year
- **Nouvelles technologies de l'information et de la communication (NTIC)**, Bachelor, 7 students, 56 hours per year
- **Readings in Natural Language Learning**, Master and post-graduate, 8 students (fall), 3 students (spring), 56 hours per year
- **Empirical Methods in NLP: Statistical Machine Translation**, Master and post-graduate, 12 students (course), 2 students (project), 56 hours per year
- **Empirical Methods and scripting programming languages**, Master (Science), Bachelor (Lettres), 5 students, 56 hours per year
- **TALN – Traitement automatique du langage naturel**, Master, 5-10 students, 28 hours per year (laboratory sessions and project monitoring)



Geneva Team Database Laboratory

Prof. Michel Léonard

MATIS

Geneva Team Database Laboratory

Prof. Michel Léonard

DOMAIN ACTIVITIES

The domain of Information System is so exciting that we find a real pleasure to work in this area. Our research is focused mainly on IS engineering in its different aspects. Basically four main areas represent our research trends:

- The first is the component-based IS engineering. Such approach regroups different fields of research, such as the IS components, interoperability, integration, evolution, static and dynamic aspects integration and IS ontology. It concerns the integration of new needs of information systems in legacy IS.
- The second area of interest is the distributed information system design and implementation. In this area, we focused on the different interactions and knowledge overlap between the IS project partners.
- The third area is the methods engineering.
- Finally, the fourth area is e-government IS engineering (egovIS), where we are building a law-based framework dedicated to institutional IS.

Our laboratory has a long experience in national, international, scientific and industrial collaborations. We are currently member of INTEROP NoE, the european network of excellence.

MATIS is led by Pr. Michel Léonard, who is currently the director of the Information Systems dept. SYINF of the University of Geneva.

Web: <http://matis.unige.ch>



MATIS

Management and Technology of Information Systems

- Component-based IS engineering
- Distributed IS
- Method engineering
- E-government IS engineering

TEAM

Director

Michel Léonard
Full professor



Members

Dr. Mehdi Snene, senior researcher
Dr. Jolita Ralyte, senior researcher
Dr. Abdelaziz Khadraoui, senior researcher

Assistants

Jorge Pardellas
Nicolas Arni-Bloch
Wanda Opprecht
Diane Asensio

Phd Students

Hammouya Messaoud

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Snene Mehdi, Pardellas Jorge, Global SA&D approach for information systems security, International Journal of Computer Science, ISSN: 1819-1819-656X, Volume 33, Issue 1, pages 54, Date 11/2006.
- [2] Mirbel, I. and Ralyté, J. (2006) Situational Method Engineering: Combining Assembly-Based and Roadmap-Driven Approaches, Requirements Engineering, 11(1), pp. 58–78.
- [3] Ågerfalk, P.J. and Ralyté, J. (2006) Situational Requirements Engineering Processes: reflecting on method engineering and requirements practice. Software Process: Improvement and Practice. John Wiley & Sons, Ltd. Vol 11 (5), pp. 447-555.

Refereed papers in Conference Proceedings

- [4] Abdelaziz Khadraoui, Slim Turki, Christine Aïdonidis, Michel Léonard, Framework for e-Government Information Systems Engineering: Describing the Organizational Layers, 2nd IEEE International Conference on Information & Communication Technologies: From Theory To Application, ISBN: 0-7803-9521, April, 2006
- [5] Michel Léonard, Abdelaziz Khadraoui, Jolita Ralyté, Regulation in Information System at the Level of Tunement, Proceedings of the International Workshop on Regulations Modelling and their Validation & Verification (REMO2V'06), CaiSE'06, Namur University Press, Belgium, June, 2006.
- [6] Snene Mehdi, Pardellas Jorge, Secure Distributed Information Systems Design and implementation, Proceedings of the Pacific Asia Conference on Information System, Kuala Lumpur, Malaysia, 2006.
- [7] Ralyté J., Backlund P., Kühn H. and Jeusfeld M. (2006). Method Chunks for Interoperability. Proceedings of the 25th International Conference on Conceptual Modelling (ER'2006). Tucson, Arizona, USA, November 6-9 2006. LNCS 4215, Springer-verlag, pp. 339-353.
- [8] Backlund P., Ralyté J., Jeusfeld M., Kühn H., Arni-Bloch N., Goossenaerts J.B.M. and Lillehagen F. (2006). An Interoperability Classification Framework

for Method Chunk Repositories. Proceedings of the 15th International Conference on Information Systems Development (ISD'2006), Budapest, Hungary, 31 August - 2 September 2006, Springer Verlag.

- [9] Arni-Bloch, N., Ralyté, J. and Léonard, M. (2006) Integrating Components of Information Systems: A Situation-driven Approach. Proceedings of the 11th International Workshop on Exploring Modeling Methods in Systems Analysis and Design (EMMSAD'06), held in conjunction with 18th International Conference on Advanced Information Systems Engineering (CAISE'06), Luxembourg, June 2006. Namur University Press, Belgium. ISBN-10: 2-87037-525-5, ISBN-13: 978-2-87037-525-9.

Books and book chapters

- [10] Snene Mehdi, Pardellas Jorge, Recent Advances in Engineering and Computer Science, New Security Dimensions : p 48- p 67, International Association of Engineer, Hong Kong, ISBN: 978-988-98671-1-9
- [11] Ralyté, J. and Di Marzo Serugendo, D. (2006) Doctoral Symposium Chairs' Massage. In Interoperability for Enterprise Software and Applications. Proceedings of the Workshops and the Doctoral Symposium of the second IFAC/IFIP I-ESA International Conference. Panetto, H. and Boudjlida, N. (Eds.), ISTE Ltd, 2006, pp 249-252.
- [12] Ralyté, J. (2006). Méthodes et Ingénierie de Méthodes. Dans « L'Encyclopédie de l'informatique et des systèmes d'information », Partie II, Section 3, chapitre 6, éditeurs J. Akoka, I. Comyn-Wattiau, Vuibert, ISBN : 2-7117-4846-4, pp. 1437 – 1447.
- [13] M. Léonard, (2006) Modèle dans le domaine des systèmes d'information, dans « L'Encyclopédie de l'informatique et des systèmes d'information », Section Ingénierie des Systèmes d'information, éditeurs J. Akoka, I. Comyn-Wattiau, Vuibert, Paris, ISBN : 2-7117-4846-4, pp 1396 - 1411.

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- Member of the steering committee of the scientific community CAISE (from 1996 - ...)
- Member of the IFIP WG8.1 group from 1981
- Member of the steering committee of the scientific community INFORSID (from 1985...)
- Member of the INTEROP governing committee

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- Jolita Ralyté – Doctoral Symposium Chair at 2nd International Conference on Interoperability for Enterprise Software and Applications I-ESA 2006, Bordeaux, France, March 20th – 24th, 2006.
- Groupes Matis-Asg – INTEROP symposium, January 30th – February 3rd, Geneva.

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- IBIC'06, Dublin City University; Ireland, September, 2006.
- INFORSID, 24ème Congrès Informatique des Organisations et Systèmes d'Information et de Décision Hammameth, Tunisie, Juin 1-3, 2006.
- CAISE'06 – 18th International Conference on Advanced Information Systems Engineering, Luxembourg, June 5 - 9, 2006.
- I-ESA'06 – 2nd International Conference on Interoperability for Enterprise Software and Applications, Bordeaux, France, March 20th – 24th, 2006.
- REFSQ'06 – 12th International Working Conference on Requirements Engineering: Foundation for Software Quality, Luxembourg, June 5 - 9, 2006.
- EMMSAD'06 – 11th International Workshop on Exploring Modelling Methods in Systems Analysis and Design, Luxembourg, 5-6 June, 2006.
- ICISOFT 2006 - 1st International Conference on Software and Data Technologies. September 11 - 14, 2006, Setubal, Portugal.
- MUSE'06 – 1st International Workshop on Meta-

modelling – Utilization in Software Engineering, September 11, 2006, Setúbal, Portugal. In conjunction with ICISOFT 2006.

- BIR 2006 – 5th International Conference on Perspectives in Business Informatics Research. Kaunas, Lithuania, September 2006.

FUNDED RESEARCH PROJECTS

Participation to European Projects

Interop NoE

Interoperability Research for Networked Enterprise Applications and Software. IST-508 011

Period: November 2003 – March 2006

Web: <http://interop-vlab.eu/>

Participation to National Projects

Computer Aided Situational Method Engineering

Project supported by FNS (Swiss National Science Foundation) No 200020-111748/1

Period: May 2006 – April 2008

Beneficiaries Jolita Ralyté and Michel Léonard

Knowledge pattern for distributed information systems design

Project supported by FNS No 200020-112153

Period: May 2006 - March 2008

Beneficiaries Michel Léonard and Mehdi Snene

Contrat avec le CTI (Centre des technologies de l'Etat de Genève)

Domaine du e-gouvernement

TECHNOLOGY TRANSFERT

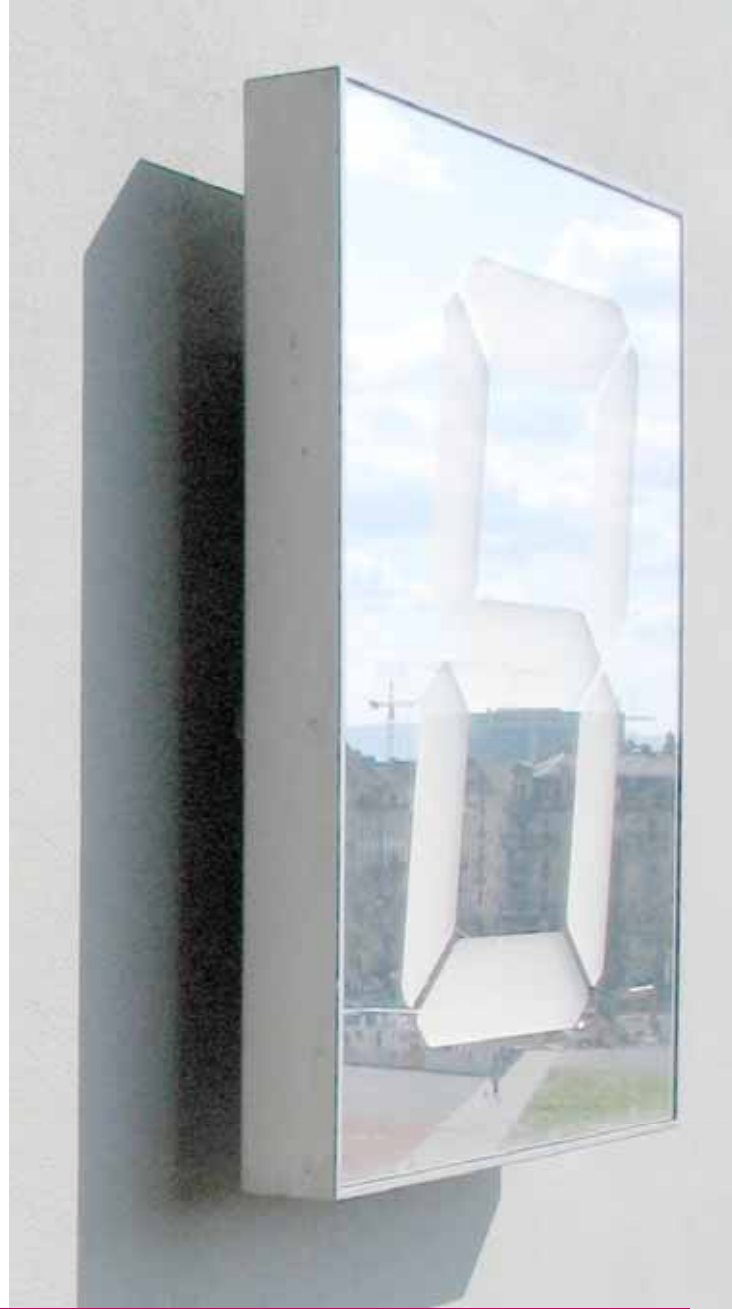
Partner of FIRST events (Rezonance)

OTHERS

Snene Mehdi, Pardellas Jorge : **Best Paper award**, Global SA&D Approach for IS security, The IAENG conference 2006, Hong Kong.

TEACHING

- **Information System Project Management**, Master, 6 ECTS credits, autumn semester, 56 hours, lectures and seminars, SES 4304023, 15 students
- **Evolution and Interoperability of Information Systems**, Master, 6 ECTS credits, autumn semester, 56 hours, lectures and seminars, SES 4304026, 15 students
- **Knowledge management**, Master, 6 ECTS credits, spring semester, 56 hours, lectures and seminars, SES 4304027, 15 students
- **Advanced Information Base**, Master, 6 ECTS credits, spring semester, 56 hours, lectures and seminars, SES 4304025, 15 students
- **Data bases**, Bachelor, 6 ECTS credits, spring semester, 56 hours, lectures and seminars, 20 students
- **Database design**, Bachelor, 6 ECTS credits, winter semester, 56 hours, lectures and seminars, SES 4204020, 20 students
- **Information system modelling**, Bachelor, 6 ECTS credits, spring semester, 56 hours, lectures and seminars, SES 4104003, 30 students
- **Informatics and Information system 1**, Master, 3 ECTS credits, spring semester, 28 hours, lectures and seminars, SES 4312017, 10 students
- **Certificates in Management and Technologies of Information Systems (I-MATIS)** in Continuing Education, 21 ECTS credits each.
- **Executive management of all Certificates I-MATIS**: Management of Projects, Security in Information Systems, Direction of Information Systems In charge of the Certificate in Direction of Information Systems
- **Methods for Engineering Information Systems and IS Project Management**, 16 hours, Continuing Education, I-MATIS (Direction of Information Systems), 6 participants
- **Information modelling**, 16 hours, Continuing Education, I-MATIS (Direction of Information Systems), 6 participants
- **Integration of knowledge**, 16 hours, Continuing Education, I-MATIS (Direction of Information Systems), 6 participants



3D Animation and Virtual Reality Laboratory

Prof. Nadia Magnenat-Thalmann

MIRALab

www.miralab.unige.ch

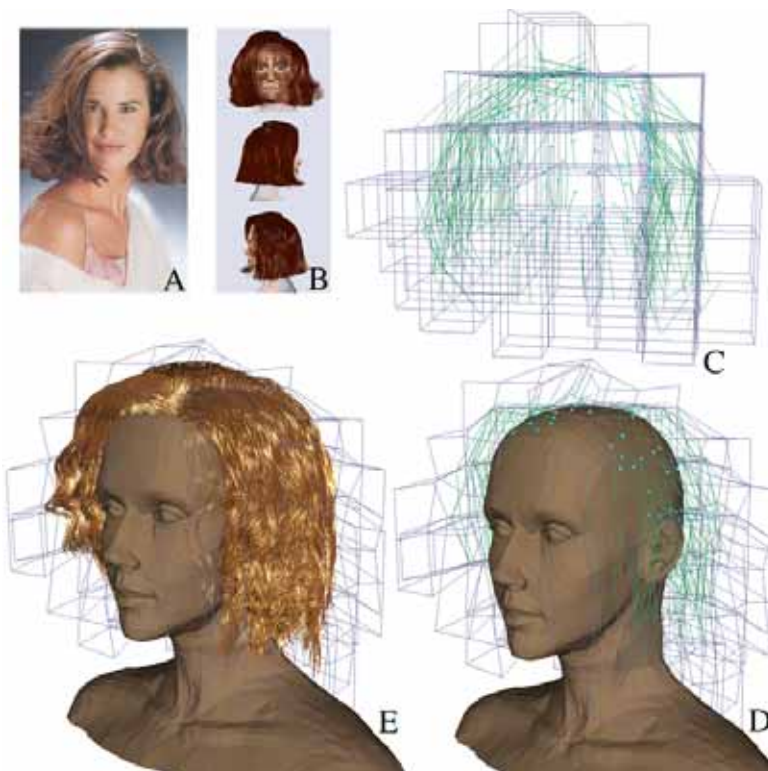
3D Animation and Virtual Reality Laboratory

Prof. Nadia Magnenat-Thalmann

DOMAIN ACTIVITIES

MIRALab was founded in 1989 by Professor Nadia Magnenat-Thalmann and is composed of 25 researchers and designers coming from many different fields, such as computer science, mathematics, medical field, design, architecture, fashion design, cognitive science, etc. The group is truly interdisciplinary, working in the field of computer graphics, computer animation and virtual worlds. Since 1992 the group has participated in more than 30 European Projects. In 2006, MIRALab has been working on the next 18 projects: 3D Anatomical Human, AIM@SHAPE, CADPIPE, CATCH, CO-ME, DANAE, ENACTIVE, EPOCH, FNRS, Francophonie, HAPTEX, HUMAINE, INTERMEDIA, Intuition, LEAP-FROG, OPENDANCE and Understanding 3D, as well as in International conferences, often organised in Switzerland by MIRALab.

Web: <http://www.miralab.unige.ch>



TEAM

Director

Nadia Magnenat-Thalmann
Full professor



Members

Dr. Laurent Moccozet (MER)
Dr. Georgios Papagiannakis (Post Doc)
Dr. Gwenaël Guillard (Post Doc)
Dr. Pascal Volino (Post Doc)
Dr. Stéphane Garchery (Post Doc)
Dr. Dimitris Protopsaltou (Post Doc)
Dr. Rajeev Gupta (Post Doc)

Assistants

Alessandro Foni
Arjan Egges
Benjamin Gilles
Bart Kevelham
Caecilia Charbonnier
Christiane Luible
Etienne Lyard
Lazhari Assassi
Lionel Egger
Lydia Yahia-Cherif
Marlène Arévalo-Poizat
Mélanie Montagnol
Mustafa Kasap
Nedjma Cadi-Yazli
Pierre Davy
Thomas Di Giacomo
Ugo Bonanni
Vincent Muggeo
Yacine Benmansour
Zerrin Kasap

Administrative staff

Ghislaine Wharton

PhD THESIS

- Georgios Papagiannakis, “An illumination registration method for dynamic virtual humans in Mixed Reality”, June 2006
- Arjan Egges, “Real-time Animation of Interactive Virtual Humans”, August 2006
- Lydia Yahia-Cherif, “Anatomical modeling and motion study of the human hip joint”, November 2006

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] A. Garcia-Rojas, F. Vexo, D. Thalmann, A. Raouzaïou, K.Karpouzis, S. Kollias, L. Moccozet and N. Magnenat-Thalmann, “Emotional Face Expression Profiles Supported by Virtual Human Ontology”, *Computer Animation and Virtual Worlds Journal*, John Wiley and Sons, Vol. 17, Nos. 3-4, pp., 259-269, July 2006.
- [2] N. Magnenat-Thalmann, U. Bonanni, “Haptics in Virtual Reality and Multimedia”, *IEEE Multimedia*, IEEE publisher, Vol. 13, No. 3, pp. 6-11, July 2006.
- [3] P. Volino, N. Magnenat-Thalmann, “Resolving Surface Collisions through Intersection Contour Minimization”, *ACM Transactions on Graphics*, ACM Press, Vol. 25, No. 3, pp. 1154 – 1159, July 2006.
- [4] D. Protopsaltou, T. Schultz, N. Magnenat-Thalmann, “Taking the Fourth Party Further? Considering a Shared Virtual Workspace for Arbitration”, *Information & Communications Technology Law*, Taylor and Francis Group, Vol. 15, No. 2, pp.157-173, June 2006.
- [5] H. Kim, C. Joslin, T. Di Giacomo, S. Garchery, N. Magnenat-Thalmann, “Device-based Decision-making for Adaptation of Three-Dimensional Content”, *The Visual Computer*, Springer Verlag, Vol. 22, No. 5, pp. 332-345, April 2006.
- [6] P. Volino, N. Magnenat-Thalmann, “Real-Time Animation of Complex Hairstyles”, *IEEE Transactions of Visualization and Computer Graphics*, IEEE publisher, Vol. 12, No. 2 (ISSN: 1077-2626), pp. 131-142, March/April 2006.
- [7] N. Magnenat-Thalmann, D.Thalmann, “Autonomous Virtual Characters: Realistic Inhabitants of Artificial Worlds”, *ACM Computing Reviews*, ACM Press, February 2006.
- [8] N. Magnenat-Thalmann, “Virtual humans: Their

Past, Their Present and Their Future”, *Journal of the Robotics Society of Japan*, Vol. 24, No. 5, pp. 597-599, 2006.

Full refereed papers in Conference Proceedings

- [9] G. Papagiannakis, A. Egges, A. Foni, N. Cadi, N. Magnenat-Thalmann, “Real-time realistic rendering and subtle body movements for cultural heritage virtual actors”, *Cultural Convergence & Digital Technology 2006*, Athens, Greece, November 2006.
- [10] B. Gilles, L. Moccozet, N. Magnenat-Thalmann, “Anatomical modelling of the musculoskeletal system from MRI”, *International conference on medical image computing and computer assisted intervention (MICCAI '06)*, Vol. 4190, pp. 289-296, October 2006.
- [11] A. Egges, G. Papagiannakis, N. Magnenat-Thalmann, “An Interactive Mixed Reality Framework for Virtual Humans”, *Cyberworlds 2006*, EPFL, Switzerland, IEEE publisher, pp. 165-172, September 2006.
- [12] P. Volino, N. Magnenat-Thalmann, “Simple Linear Bending Stiffness in Particle Systems”, *SIGGRAPH-Eurographics Symposium on Computer Animation 2006*, pp. 101-105, September 2006.
- [13] N. Magnenat-Thalmann, M. Montagnol, R. Gupta, and P. Volino, “Interactive Virtual Hair-Dressing Room”, *CAD Conference 2006*, *International Journal on Computer-Aided Design & Applications*, No. 5, pp.535-546, June 2006.
- [14] R. Gupta, M. Montagnol, P. Volino, and N. Magnenat-Thalmann, “Optimized Framework for Real Time Hair Simulation”, *Proceedings of Computer Graphics International (CGI '06)*, LNCS, Springer Verlag, pp. 702-710, June 2006.
- [15] L. Yahia-Cherif, N. Magnenat-Thalmann, “Quantification of Skin Movements Artefacts using MRI”, *9th International Symposium on 3D analysis of Human Movement*, electronic proceedings, June 2006.
- [16] N. Magnenat Thalmann, G. Papagiannakis, “Virtual Worlds and Augmented Reality in Cultural Heritage”, *Applications, Recording, Modeling and Visualization of Cultural Heritage*, Taylor & Francis Group, London, ISBN 0 415 39208X, pp. 419-430, January 2006.

- [19] P. Volino, P. Davy, U. Bonanni, N. Magnenat-Thalmann, G. Böttcher, D. Allerkamp, F.-E. Wolter. From measured physical parameters to the haptic feeling of fabric. In Proceedings of the HAPTEX'05 Workshop on Haptic and Tactile Perception of Deformable Objects, Hanover, pp. 17-29. December 2005
- [20] S. Garchery, A. Egges, N. Magnenat-Thalmann. Fast Facial Animation Design for Emotional Virtual Humans. Measuring Behaviour, Wageningen, NL, CD-ROM Proceeding. September 2005
- [21] D. Protopsaltou, N. Magnenat-Thalmann. The Fourth Party in Online Arbitration as a Shared Virtual Workspace. ACM SIGGRAPH Conference Web Program, Los Angeles, California, USA: ACM Press. August 2005
- Experts Jury Member of the Vienna Science and Technology Fund, Austria.
 - Jury Member of the Art Competition at ZKM, Karlsruhe, Germany
 - Member of the Board of the Assessment Centre of Excellence, Catholic University of Leuven, Belgium

Books and book chapters

- [22] T. Di Giacomo, H. Kim, S. Garchery, C. Joslin, N. Magnenat-Thalmann, "Dynamically Adaptive Streaming of 3D Data for Animated Characters", in Game Programming Gems 6, Mike Dickheiser (ed.), Charles River Media, pp. 593-606, March 2006.
- [23] A. Egges, T. Di Giacomo, N. Magnenat-Thalmann, "Synthesis of Realistic Idle Motion for Interactive Characters", in Game Programming Gems 6, Mike Dickheiser (ed.), Charles River Media, pp. 409-422, March 2006.
- Conference and Program chair of the 24th Computer Graphics International Conference (CGI'2006), June 2006, China.
 - Conference and Program chair of the Computer Animation and Social Agents 2006 Conference (CASA '06), Computer Graphics Society, from July 15th to 7th, 2006.
 - Conference Tutorial chair of the European Association for Computer Graphics, Eurographics 2006, September 2006, Austria.
 - Conference co-chair of the 14th Pacific Conference on Computer Graphics and Applications (Pacific Graphics 2006), from October 11th to 13th in Taiwan.

Research and technical reports

- [24] Several technical reports for the following projects: 3D Anatomical Human, AIM@Shape, CADPIPE, COME, DANAE, ENACTIVE, EPOCH, HAPTEx, HUMAINE, INTERMEDIA, INTUITION, LEAPFROG, OPENDANCE and Understanding 3D.

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES (Prof. N. Magnenat-Thalmann)

- Member of the third cycle in computer science committee, CUSO, Switzerland
- Member of the Board of the National Library, Bern
- Member of the Scientific Advisory Board of CSCS (Centro Svizzero di Calcolo Scientifico), Mano, Switzerland, 2004–2006

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR (Prof. N. Magnenat-Thalmann)

- Conference and Program chair of the 24th Computer Graphics International Conference (CGI'2006), June 2006, China.
- Conference and Program chair of the Computer Animation and Social Agents 2006 Conference (CASA '06), Computer Graphics Society, from July 15th to 7th, 2006.
- Conference Tutorial chair of the European Association for Computer Graphics, Eurographics 2006, September 2006, Austria.
- Conference co-chair of the 14th Pacific Conference on Computer Graphics and Applications (Pacific Graphics 2006), from October 11th to 13th in Taiwan.

MEMBER OF CONFERENCE PROGRAM COMMITTEES (Prof. N. Magnenat-Thalmann)

- Pacific Graphics 2006, 14th Pacific Conference on Computer Graphics and Applications, October 2006.
- VSMM 2006, the 12th International Conference on Virtual Systems and Multimedia, October 2006.

INVITED TALKS

- Keynote paper at GRAPHITE 2006, Kuala Lumpur, Malaysia, Real-time animation of ancient Roman sites, November 29 to December 2, 2006.

FUNDED RESEARCH PROJECTS

Participation to European projects

3D Anatomical Human

"3D Anatomical Functional Models for the Human Musculoskeletal System"

Period: October 2006 – September 2010

Type: European Research

Website: www.leapfrog-eu.org/

Partners: MIRALab, University of Geneva - Switzerland, Istituti Ortopedici Rizzoli – Italy, University College London – Great Britain, Institut National de Recherche en Informatique et Automatique – France, Visual Computing Group, CRS4 - Italy, Ecole Polytechnique Fédérale de Lausanne – Switzerland, Vrije Universiteit Brussel – Belgium, Center for Sensory-Motor Interaction, Aalborg University - Denmark

AIM@Shape

"Advanced and Innovative Models And Tools for the development of Semantic-based systems for Handling, Acquiring, and Processing knowledge Embedded in multidimensional digital objects"

Period : January 2004 - July 2006

Type : European Research

Website : www.aim-at-shape.net

Partners: Ecole Polytechnique Fédérale de Lausanne - Switzerland, C.N.R. – Istituto di Matematica Applicata e Tecnologie Informatiche – Dept. Of Genova - Italy, Università di Genova – Dipartimento di Informatica e Scienze dell'Informazione - Italy, Fraunhofer Institut für Graphische Datenverarbeitung - Germany, INRIA – France, Institut National Polytechnique de Grenoble - France, Informatics and Telematics Institut – Center for Research and Technology Hellas - Greece, Max-Planck-Institut für Informatik - Germany, Stiftelsen for industriell og teknisk forskning ved Norges Tekniske Høgskole - Norway, Technion – Israel Institute of Technology - Israel, Utrecht University - Netherlands, Weizmann Institute of Science – Israel

CADPIPE

"CAD production PIPEline"

Period: January 2005 - December 2006

Type: European Research

Website: cadpipe.vtt.fi/

Partners: DeltaCad- France, DeskArtes – Finland, Fraunhofer Institute IFF, Fraunhofer-Gesellschaft zur Foerderung der angewandten Forschung e.V. – Germany, InfoTRON A.S. – Turkey, Ingeniería y Soluciones Informáticas del Sur S.L. – Spain, International Computer Institute – Turkey, Melon Technologies JSC – Bulgaria, Nemetschek – Bulgaria

NIKI Information Technologies Ltd – Greece, SenseTrix Oy –

Finland, SienaBioGraFiX s.r.l. – Italy, TESTALUNA srl – Italy

VTT Information Technology – Finland, University of Geneva

DANAE

"Dynamic and distributed Adaptation of scalable multimedia coNtent in a context-Aware Environment"

Period: January 2004 - June 2006

Type: European Research

Status: Completed project

Website: danae.rd.francetelecom.com/

Partners: Imperial College London - Great Britain, Siemens - Germany, T-Systems - Germany, France Telecom R & D - France, INRIA - France, Groupe des Ecoles des Telecommunication - France, IMEC - Belgium, MUSEON - Netherlands, Rheinisch Westfalische Technische Hochschule Aachen - Germany, Universitat Klagenfurt - Austria, MIRALab - University of Geneva

ENACTIVE

"Enactive Interfaces"

Period: January 2004 – December 2007

Type: European Research

Status: Ongoing

Website: www.enactivenetwork.org

Partners: Scuola Superiore Sant'Anna – PERCRO - Italy, Institute National Polytechnique de Grenoble, Computer Sciences and Artistic creation Laboratory - France, University of Exeter - Biomedical Physics Group - United Kingdom, Centro de Estudios e Investigaciones Tecnicas de Guipuzcoa - Spain, University of Lund - Department of Design Sciences - Sweden, Université de technologie de Compiègne - Département Technologie et Sciences de l'Homme - France, Uppsala University - Department of Psychology - Sweden, DLR Institute of Robotics and Mechatronics - Germany, Limburgs Universitair Centrum - EDM Expertise center for Digital Media - Belgium, Sound Processing and Control Laboratory - Faculty of Music, McGill University - Canada, University of Minnesota - Human Factors Research Laboratory - United States, Fundacion Labein - Mechanics Unit - Spain, Max Planck Institute for biological cybernetics Tuebingen - Germany, University of Geneva - MIRALab - Switzerland, Ecole Polytechnique Federale de Lausanne - Virtual Reality Laboratory - Switzerland, Università degli Studi di Padova - Dipartimento di Ingegneria dell'Informazione - Italy, Sony Computer Science Laboratory - France, Ecole des Hautes Etudes en Sciences Sociales - Institut Jean Nicod - France, University of Genoa - Department of Communications, Computer and Systems Science - Italy, Association pour la Création et la Recherche sur les Outils d'Expression - France, Université Pierre Mendès - France, Centre National de Recherche Scientifique - Laboratoire de Psychologie Expérimentale - France, University of Montpellier I - Motor Efficiency & Deficiency Laboratoire - France, Queen's University of Belfast - United Kingdom

EPOCH

"European research network on excellence in Processing Open Cultural Heritage"

Period: March 2004 - March 2008

Type: European Research

Status: Ongoing

Website: www.epoch-net.org

Partners: 100, including: University of Brighton – Great Britain, Ename Centre for Public Archaeology and Heritage – Belgium, Katholieke Universiteit Leuven – Belgium, MIRALab, University of Geneva – Switzerland, PIN srl, Servizi didattici e scientifici per l'Università di Firenze – Italy, Technische Universitaet Graz – Austria, Technische Universitaet Wien – Austria

HAPTEX

"HAPtic sensing of virtual TEXTiles"

Period: December 2004 - November 2007

Type: European Research

Status: Ongoing

Website: haptex.miralab.unige.ch/

Partners: UHAN - WelfenLab, University of Hanover – Germany, SWL - SmartWearLab, Tampere University of Technology - Finland, PERCRO Laboratory - Scuola Superiore di Studi Universitari e di Perfezionamento Sant'Anna - Italy, UNEXE - Biomedical Physics Group, University of Exeter - Great Britain

HUMAINE

"Humaine- Machine Interaction Network on Emotion "

Period: January 2004 – December 2007

Type: European Research

Website: <http://emotion-research.net/>

Partners: Ecole Polytechnique Fédérale de Lausanne - Switzerland, Imperial College - Great Britain, T-Systems Nova - Germany, University of Salford - Great Britain, University of Oxford - Great Britain, Centre National De La Recherche Scientifique - France, Inesc Id - Instituto de Engenharia de Sistemas e Computadores: Investigação e Desenvolvimento em Lisboa - Portugal, King's College, London - Great Britain, University of Haifa - Israel, Università Degli Studi di Genova - Italy, Friedrich-Alexander-Universität Erlangen-Nürnberg - Germany, Universität Augsburg - Germany, Österreichische Studiengesellschaft für Kybernetik - Austria, Kungliga Tekniska Högskolan - Sweden, Université de Paris VIII - France, University of Hertfordshire - Great Britain, Institute of Communication and Computer Sys-

tems - Greece, Queen's University Belfast - Great Britain, Deutsches Forschungszentrum für Künstliche Intelligenz GmbH, Saarbrücken - Germany, Istituto Trentino Di Cultura - Italy, Tel Aviv University - Israel, Trinity College - Ireland, La Cantoche Production - France, France Télécom - France, Instituto Superior Técnico - Portugal, MIRALab, University of Geneva - Switzerland

INTERMEDIA

"Interactive Media with Personal Networked Devices IST Network of Excellence"

Period: October 2006 – September 2010

Type: European Research

Website: www.leapfrog-eu.org/

Partners: MIRALab, University of Geneva – Switzerland, Carleton University – Canada, Consiglio Nazionale delle Ricerche – Italy, Ecole Polytechnique Fédérale de Lausanne – Switzerland, Fraunhofer Institut Angewandte Informationstechnik – Germany, Groupe des Ecoles de Télécommunications – France, Industrial Systems Institute – Greece, Interdisciplinair instituut voor BreedBanTechnologie – Belgium, Intracom S.A. Telecom Solutions – Greece, Klagenfurt University – Austria, Kuratorium OFFIS e.V. – Germany, Lancaster University – Great Britain, Multimedia Universiteit Gent – Belgium, Themisch-Westfaelische Technische Hochschule Aachen – Germany, Telefónica Investigación y Desarrollo – Spain, Università degli Studi di Genova – Italy

INTUITION

"Network of Excellence on Virtual Reality and Virtual Environments Applications for Future Workspaces"

Period: September 2004 - August 2008

Type: European Research

Status: Ongoing

Website: www.intuition-eunetwork.net/

Partners: Advanced Realtime Tracking GmbH (Germany), Akademia Ekonomiczna w Poznaniu (Poland), Alenia Aeronautica (Italy), ALENIA Spazio S.p.A. (Italy), Association pour la Recherche et le Développement des Méthodes et Processus Industriels (France), Barco NV (Belgium), C.R.F. Società Consortile per Azioni (Italy), Centre for Research and Technology Hellas / Hellenic Institute of Transport (Greece), Centre Lavallois de Ressources Technologiques (France), Centre National de la Recherche Scientifique (France), Commissariat à l'Énergie Atomique (France), CS Systèmes D'Information (France), DASSAULT Aviation (France), EADS Space Transportation GmbH, Ecole Nationale d'Ingénieurs de Brest (France)

Ecole Polytechnique Fédérale de Lausanne (Switzerland), Electricité de France (France), Foundation of the Hellenic World (Greece), France Telecom R & D (France), Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung (Germany), HAPTION S.A. (France), Helsinki University of Technology (Finland), ICIDO Gesellschaft für innovative Informationssysteme mbH (Germany), Institut National de Recherche en Informatique et Automatique (France), Institut National de Recherche et de Sécurité (France), Institute of Communication and Computer Systems (Greece), Institute of Computer Science, Foundation for Research and Technology – Hellas (Greece), Italdesign – Giugiaro Spa (Italy), LABELIN (Spain), Max Planck Institute for Biological Cybernetics (Germany), MERCURY COMPUTER SYSTEMS SARL, ONDIM (France), OVIDIUS University of Constanta (Romania), Robotics Institute – University of Valencia (Spain), S C N R Tech, S.R.L Brasov (Romania), Scuola Superiore di Studi Universitari e di Perfezionamento S.ANNA (Italy), Société Nationale des Chemins de Fer Français (France), Space Applications Services NV (Belgium), Swiss Federal Institute of Technology, Zurich (Switzerland), Technische Universität München (Germany), TECNATOM, S.A. (Spain), TILS (Italy), TNO (The Netherlands), Universidad de Málaga (Spain), Universidad Politécnica de Madrid (Spain), University of Basel (Switzerland), University of Cyprus (Cyprus), University of Nottingham (U.K.), University of Patras (Greece), University of Salford (U.K.), University of Sussex (U.K.), University of Twente (The Netherlands), University of Warwick (U.K.), University of West Bohemia (Czech republic), University Transilvania of Brasov (Romania), Volvo Technology Corporation (Sweden), VTT Technical Research Centre of Finland (Finland)

LEAPFROG CA

"Leadership for European Apparel Production From Research along Original Guidelines" (Coordination Action)

Period: June 2004 – May 2007

Type: European Research

Website: www.leapfrog-eu.org/

Partners: European Apparel And Textile Organisation, Deutschen Institute für Textil- und Faserforschung Denkendorf, Institut Français Textile Habillement, Athens Technology Center S.A., D'Appolonia S.p.A., ENEA, TXT e-Solutions SpA, TXTe Solution GmbH, Politecnico di Milano, TECNOTESSILE Società Nazionale di Ricerca Tecnologica r.l., GRUPPO SOI SPA, Gerry Weber Services International GmbH, Fratelli Piacenza Spa, MIRALab - Université de Genève, Bekleidungsphysiologisches Institut Hohenstein e.V., LECTRA SA, Bivolino.com, Fraunhofer Gesellschaft zur For-

derung der angewandten Forschung e.V. Institut Graphische Datenverarbeitung, Asociatia "Microregiunea De Dezvoltare Economico-Sociala A Tarii Lapusului", Wetenschappelijk en Technisch Centrum van de Belgische Textielnijverheid, Gaetano Rossini Holding S.p.A., IRIS S.p.A., Jemtex Ink Jet Printing Ltd., Netherlands Organisation for Applied Scientific Research, Shishoo Consulting A.B., Centro Tecnológico das Industrias Textil e do Vestuário de Portugal, TRA Voorzorg - Textile Research Association, Grado Zero Espace S.r.l., Angles Textil SA, STAM S.r.l., University of Genova - Dipartimento di Meccanica e Costruzione delle Macchine, Institut für Nahtechnik e.V., TWI Ltd., Philipp Moll - office for modern sewing technology, King's College London, University of London, Australian Wool Innovation

LEAPFROG IP

"Leadership for European Apparel Production From Research along Original Guidelines" (Integrated Project)

Period: May 2005 – July 2009

Type: European Research

Website: www.leapfrog-eu.org/

35 partners (non-exhaustive list): Euratex – Belgium, ANTEX, Angles Textil – Spain, ATC, Athens Technology Center – Greece, Bekleidungsphysiologisches, Institut Hohenstein – Germany, D'Appolonia – Italy, DITF- ITV – Germany, ENEA – Italy, IFTH, Institut Français Textile Habillement – France, Lectra S.A. – France, Philipp Moll office for modern sewing technology – Germany, TNO – Netherlands, University of Cambridge, Cavendish Laboratory – Great Britain, MIRALab, University of Geneva - Switzerland

OPENDANCE

"Open-Editing Cooperative Platform for Web-Dance"

Period: October 2005 – September 2008

Type: European Research

Website: www.leapfrog-eu.org/

Partners: CONCEPTUM, S.A. – Greece, English Folk Dance and Song Society – Great Britain, Folklore brass – Bulgaria, Lyceum of Greek Women – Belgium, MIRALab, University of Geneva – Switzerland, University of Hertfordshire – Great Britain, University of the Aegean, DCTC – Greece, Viesoji Istaiga Tumsiskiu Munziejaus Dvaro Akademija – Latvia, Vytautas Magnus University - Latvia

FUNDED RESEARCH PROJECTS

Participation to National projects

CATCH

“Communication Technologies for Cultural Heritage”

Period: January 2006 – December 2007

Type: Swiss Research

Website: co-me.ch

Partners: TEC- Lab, Università delle Svizzera Italiana – Switzerland, MIRALab, University of Geneva – Switzerland, San Francisco Museum of Modern Art – USA, University of Basel - Switzerland

CO-ME

"The Computer Aided and Image Guided Medical Interventions"

Period: July 2005 - June 2009

Type: Swiss Research

Website: co-me.ch

Partners: École Polytechnique Fédérale de Lausanne (EPFL), University Hospital Basel, University of Basel, University, Hospital Berne, University of Berne, Berne University of Applied Sciences, University Hospital Geneva (HUG), University of Geneva, University Hospital Zurich, Zurich University of Applied Sciences Winterthur, EMPA Dübendorf, Kantonsspital Luzern

FNRS

“Swiss National Research Foundation Haptic Simulation of Hair”

Period: October 2006 – September 2008

Type: Swiss Research

Website: co-me.ch

Partners: MIRALab, University of Geneva

Understanding 3D

“Understanding 3D (e-learning)”

Period: January 2006 – July 2008

Type: Swiss Research

Website: co-me.ch

Partners: MIRALab, University of Geneva – Switzerland, Computer Graphics Laboratory, ETH Zentrum, Zurich – Switzerland, Departement Informatik, Universität Basel -

Switzerland

Other Projects

International organization of the francophonie

“Accès au patrimoine vestimentaire contemporain et traditionnel francophone”

Period: September 2006 – May 2008

Type: Fonds Francophone des Inforoutes

Website: co-me.ch

Partners: MIRALab, University of Geneva, Switzerland (coordinator), American university of Beirut, department of computer science, Lebanon, Regional museum of Mahdia, Tunisia

OTHERS

Public exhibition and performance

- ENACTIVE Workshop and EU Review, the third ENACTIVE Review held in conjunction with the ENACTIVE workshop, hosted by MIRALab at the University of Geneva, from 28th to 30th March 2007.
- Spring School on Wearable Computing, in the context of the third cycle roman of informatics, this workshop was addressed with issues on wearable computers the 5th March 2007.
- Workshop 3ème Cycle Informatique, addressed issues on haptic interaction the 2nd October 2006.

Courses and tutorials

- Real-time Inhabited Virtual Worlds and Interaction, Tutorial for the Eurographics 2006.

Refereeing

- Jury of Ph.D. thesis for New Zealand, France, Sweden, and Switzerland.
- European Union, Esprit Projects, Brussels.
- Research Grants Council of Singapore.
- Natural Sciences and Engineering Research Council of Canada.
- National Science Foundation U.S.A.
- Swiss National Research Foundation.

- Austrian Research Foundation.
- ACM SIGGRAPH, IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Graphics and Applications, IEEE Computer, Communications of ACM, The Visual Computer, Computer Graphics Forum, Computer Vision, Graphics and Image Processing, Presence, International Journal of Human-Computer Studies, Computers and Graphics.
- **Programmation de Base**, Bachelor, winter only, 26 hours
- **Synthèse d'Image et Réalité Virtuelle**, Bachelor, summer only, 26 hours
- **Understanding and Simulating Body and Facial Emotions**, Master, summer only, 20 hours
- **Virtual and Augmented Worlds**, Master, winter only, 20 hours

Editorial responsibilities

- Since 1990, Co-founder and Co-editor-in-chief, "Journal of Visualization and Computer Animation", John Wiley and Sons.
- Member of the Advisor Board, International Journal of Image and Graphics, World Scientific, since January 2001
- Since January 1, 2000, Editor-in-chief of the Journal "The Visual Computer" published by Springer-Verlag, Germany,
- Since 1987, Associate Editor-in-chief, "The Visual Computer", Springer-Verlag, Heidelberg.
- Editor, "Computational Geometry Journal", North Holland, since 1995.
- Editor-in-chief, "Computer Animation and Virtual Worlds", published by John Wiley and Sons.
- Member of Editorial Board, Journal of Universal Computer Science, Electronic Journal, since August 1994.
- Member of Editorial Board, Journal of Computer Graphics, Russia, since 1993.

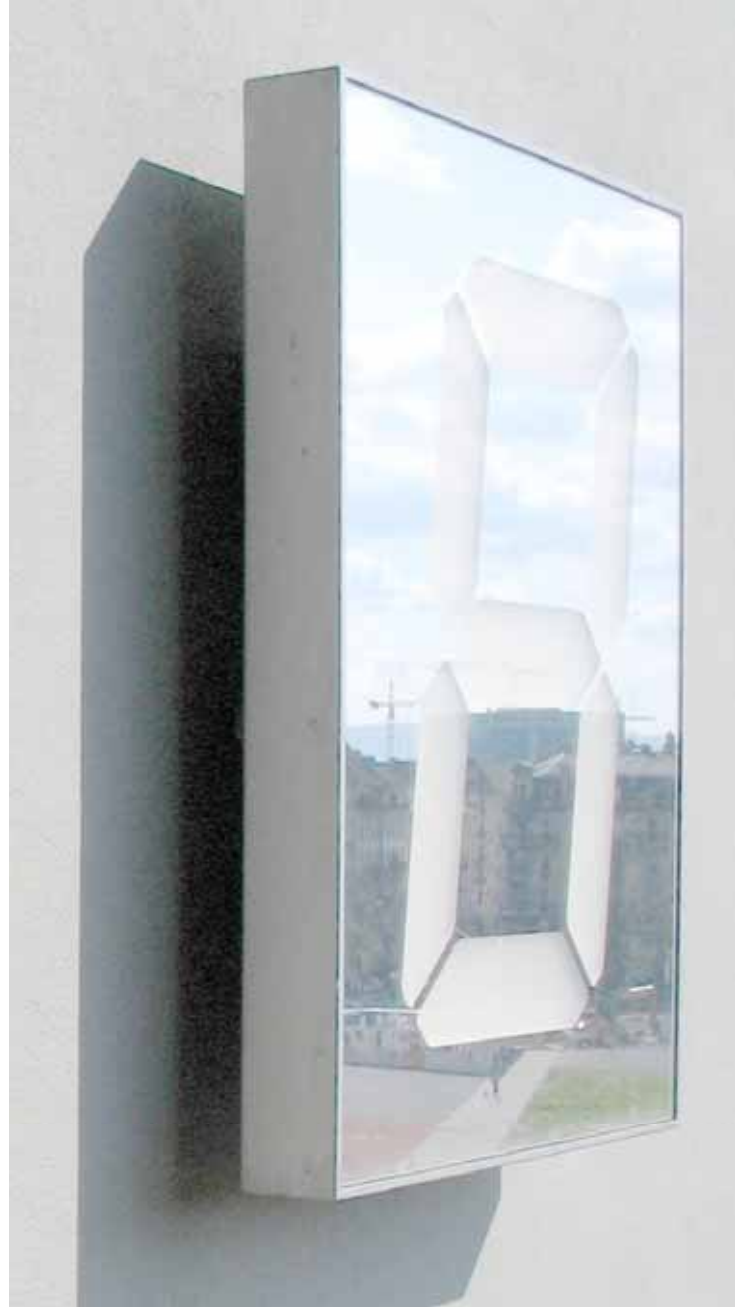
TEACHING

MIRALab's courses are specially focused towards the fields of Computer Animation, Informatics and Multimedia:

Some Courses are oriented to under-graduate students (Bachelors)

Other courses are oriented to graduate students (Masters)

- **Animation & Multimedia**, Bachelor, winter only, 26 hours
- **Outils Informatiques**, Bachelor, winter or summer semester only, 26 hours



Software Modelling and Verification

Prof. Didier Buchs

SMV

DOMAIN ACTIVITIES

Developing complex and reliable software systems requires rigorous methods for modelling, designing and verifying them. The SMV lab is involved in designing dedicated formalisms that are semantically well described in order to make analysis of system properties possible, to automatically produce code and to select pertinent test cases. A coherent set of tools has been developed in order to apply our methods to software-intensive systems.

We are currently studying :

1. development of techniques for distributed object-oriented and reconfigurable system modelling
2. test selection techniques
3. software prototyping and GUI generation
4. model engineering (MDA,UML, model transformation)

Web: <http://smv.unige.ch/>

TEAM

Director

Didier Buchs
Associate professor



Members

Dr. David Hurzeler

PhD students

Ang Chen

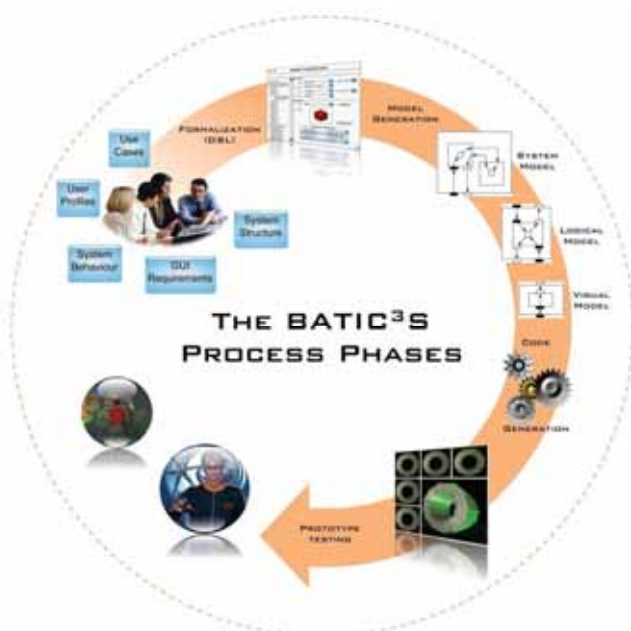
Levi Lúcio

Luis Pedro

Matteo Risoldi

Odorico Von Susani

Andrey Berlizev



LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Levi Lucio and Luis Pedro and Didier Buchs, "System Prototype and Verification Using Metamodel-Based Transformations", DSO, April 2007 (Vol. 8, No. 4) ISSN: 1541-4922

Full refereed papers in Conference Proceedings

- [2] M. Risoldi and V. Amaral, "Towards a formal, model-based framework for control systems interaction prototyping", N. Guelfi and D. Buchs eds., RISE 2006 proceedings, Springer-Verlag, LNCS 4401, pp. 144-159, 2007
- [3] Didier Buchs, Luis Pedro, Levi Lúcio, "Formal Test Generation from UML Models", In "Dependable Systems: Software, Computing, Networks – Research Results of the DICS Program". LNCS 4026, pp.145-171.
- [4] Ang Chen and Didier Buchs, "Towards Service-based Business Process Modelling, Prototyping and Integration", Rapid Integration of Software Engineering techniques 2005, RISE'06, LNCS 3943
- [5] Luis Pedro and Levi Lucio and Didier Buchs, "Prototyping Domain Specific Languages With COOPN", Rapid Integration of Software Engineering techniques, RISE'06, LNCS 3943
- [6] David Hurzeler, "Network Structure and Traffic Modeling and Simulation with CO-OPN", RISE'06, LNCS 3943
- [7] Luis Pedro, Levi Lúcio, Didier Buchs, "Principles for System Prototype and Verification using Metamodel based Transformations", Proceedings of IEEE International Workshop RSP 2006, Heraklion, Greece. pp.10-17.
- [8] Levi Lúcio, Didier Buchs, Luis Pedro, "Semi-Automatic Test Case Generation from CO-OPN Specifications", Proceedings of the M-TOOS 2007 Workshop, Portland, Oregon, USA.
- [9] Ang Chen, Didier Buchs, "Modelling Concurrent Systems using Concurrent Object Oriented Petri Nets", Levi Lúcio, Luis Pedro, Matteo Risoldi, Proceedings of MOCA 2006, Turku, Finland.
- [10] Ang Chen and Didier Buchs, "A Generative Business Process Prototyping Framework", In Proc. 17th IEEE

International Workshop on Rapid System Prototyping, 2006, Crete, Greece.

Technical reports

- [11] "Syntax and Semantics of SATEL (Semi Automatic TEsting Language)", Levi Lúcio, Internal Note from the SMV/CUI, University of Geneva.
- [12] "UML2 to CO-OPN transformation: State Machines and Class Diagrams transformation", Luis Pedro. Internal Note from the SMV/CUI, University of Geneva.
- [13] Ang Chen and Didier Buchs, "Transactional Business Process Design and Prototyping: A COOPN approach", CUI Technical Report, University of Geneva, September 2006.
- [14] Ang Chen, "COOPN Prototype Runtime Supports Design and Implementation", CUI Technical Report, University of Geneva, November 2006.

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- D. Buchs, Editorial Board, LNCS Transactions on Petri Nets and Other Models of Concurrency (ToPNoC)

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- D. Buchs: Rise'06, Program Chair, Conf. on Rapid Integration of Software Engineering, Geneva, September 2006.
- M. Risoldi, RUIPIACS workshop 2006 (in conjunction with the RISE 2006 conference), Geneva, Switzerland, 13-15 September 2006

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- D. Buchs: ICATPN, Program committee of International Conference on Application and theory of Petri Nets, Turku, June 2006
- D. Buchs: RISE, Program committee of RISE'06, Geneva, Switzerland 2006
- D. Buchs: Moca 06, Turku, June 2006

INVITED TALKS

- Luis Pedro, Presentation of a case study “Cycle de vie de la taxation” at the Département des constructions et des technologies de l’information. December 8, 2006, Geneva Switzerland.
- Didier Buchs, Correct meeting, “CAA, UML and Petri Nets for Test Case Generation”, February 2006, Luxembourg
- Levi Lucio, Invited Keynote speech at the RISE 2006 Workshop. September 15th in Geneva, Switzerland. Title of the presentation: “On the integration of Semi-Formal and Formal Tools”
- Levi Lucio, Invited talk at the Cisco User Group meeting. January 18th in Amsterdam, Holland, 2006. Title of the presentation: “Wireless Innovation at University of Geneva”.

FUNDED RESEARCH PROJECTS

Participation to European projects

Interreg Valid

Funded by interreg European funds

Partners: EPFL, University of Geneva, University of Franche-Comté, Unicible.

Period: November 2005 – December 2006

CORRECT

Funded by Luxembourg European funds

Partners: Luxemburg, University of Geneva, University of Newcastle.

Period: November 2004 – December 2006

Participation to National projects

ISIS – RA

Integrated System Implementation and Specification for Reliable distributed Applications, FNRS.

Period: November 2004 – October 2006

ISIS – RA

Integrated System Implementation and Specification for Reliable distributed Applications, FNRS.

Period: November 2006 – October 2008

VeDiss Project

Funded by Haslerstiftung, DICS initiative

Partners: EPFL, University of Geneva

Period: August 2003 – July 2007

BATICS Project

Funded by Haslerstiftung,

Partners: HES-SO-EIG, University of Geneva, University of Llsboa, CERN

Period: August 2005 – July 2008

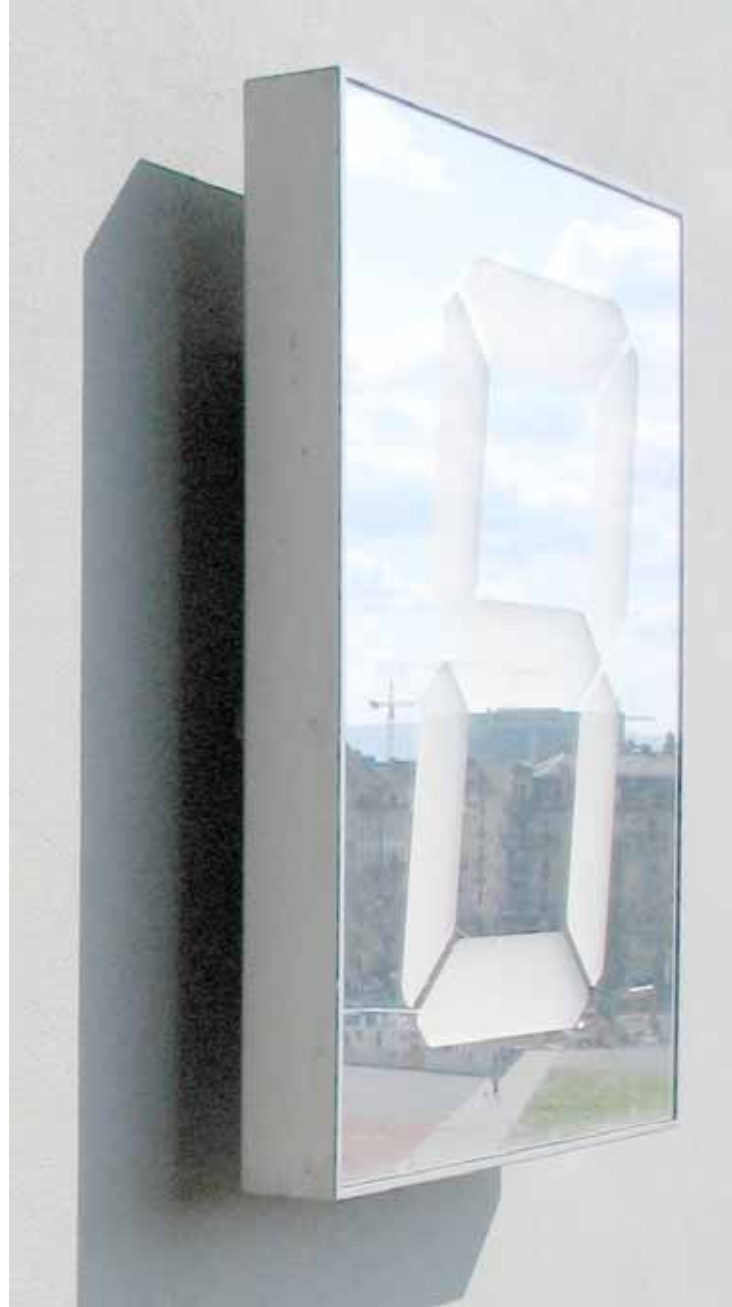
OTHERS

Thesis Jury

- Levi Lucio: Master Thesis: “Refactoring of Relational Databases”, Alexander Goos, EPLF (École Polytechnique Fédérale de Lausanne), 13th March 2006. Thesis supervisors: Thomas Baar, Slavisa Markovic.

TEACHING

- **Semantics of Programming language**, Winter semester, Bachelor 2nd year, 52 hours
- **Formal tools**, Winter semester, Bachelor 2nd year, 52 hours
- **Software Engineering**, Winter semester, Bachelor 3rd year, 52 hours
- **Modeling and Verification**, Summer semester, Bachelor 3rd year, 52 hours
- **Advanced formal Tools (optional)**, Winter semester, Master, 52 hours
- **Concurrency and Verification (optional)**, Summer semester, Master, 52 hours
- **Doctoral school on Modeling and Verification of software, October 2006, Geneva.**



Scientific and Parallel Computing
Prof. Bastien Chopard

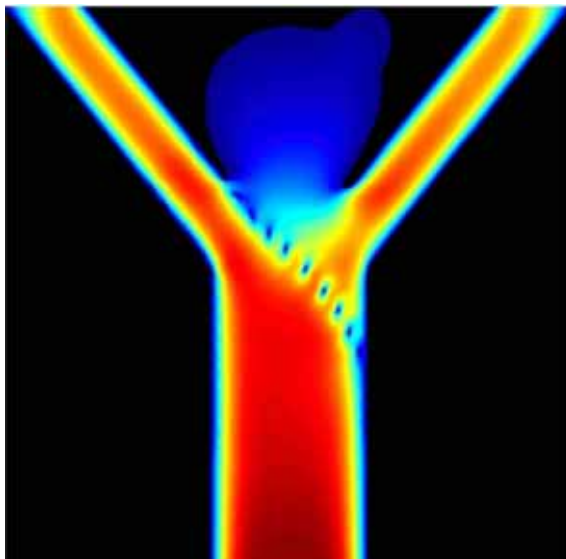
SPC

DOMAIN ACTIVITIES

One main research activity concerns the study of complex systems, in particular the development of new numerical methods to model and simulate phenomena in natural sciences, economics, social systems and bio-medical applications. Cellular automata, Lattice Boltzmann and multi-agent techniques are central tools to address these questions. Parallel programs and algorithms are developed to implement the simulation on large PC clusters to discover, explain or reproduce new phenomena.

Another domain of activity is bioinformatics, in collaboration with Swiss Institute of Bioinformatics. New classification methods and algorithmic techniques are developed to analyse the coding in protein sequences and to build large phylogenetic trees.

Web: <http://spc.unige.ch/>



Blood flow simulation in blood vessels with an aneurism

TEAM

Director

Bastien Chopard
Associate professor



Members

Dr. Rafik Ouared (Scientific collaborator)
Alexandre Le Bouthiller (boursier d'excellence)

Phd students

Davide Alemani
Philippe Combes
Jean-Luc Falcone
Jonas Latt
Hung Nguyen
Olivier Marcou
Bernhard Sonderegger

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Albuquerque, D. Alemani, B. Chopard and P. Leone, A multigrid, "Lattice Boltzmann finite difference scheme for the diffusion equation", *International Journal For Multiscale Computational Engineering*, Vol 4(2), pp. 209--219, 2006
- [2] L. Cappiotti and B. Chopard, "A Lattice Boltzmann Study of the 2D Boundary Layer Created by an Oscillating Plate", *J. Mod. Phys. C*, Vol 17 (01), pp 39--52, 2006.
- [3] S. Orszag, H, Chen, S, Succi, J. Latt and B. Chopard, "Turbulence Effect on Kinetics Equations", *J. of Scientific Computing*, Volume 28, pp. 459-466, 2006
- [4] J. Latt and B. Chopard, "Lattice Boltzmann Method with regularized non-equilibrium distribution functions", *Mathematics and Computers in Simulation*, Vol 72, p. 165--168 2006
- [5] J. Latt, Y. Grillet, B. Chopard and P. Wittwer, "Simulating an exterior domain for drag force computations in the Lattice Boltzmann method", *Mathematics and Computers in Simulation*, Vol 72, pp. 169-172 2006.
- [6] B. Chopard, R. Ouared and D. A. Rufenacht, "A lattice Boltzmann simulation of clotting in stented aneurysms and comparison with velocity or shear stress reductions", *Mathematics and Computers in Simulation*, Vol 72, pp. 108-112, 2006.
- [7] H. Nguyen, B. Chopard, S. Stoll, "A lattice Boltzmann study of the hydrodynamic properties of 3D fractal aggregates", *Mathematics and Computers in Simulation*, Vol 72, pp. 103--107, 2006.
- [8] Miki Hirabayashi, Makoto Ohta, Daniel A. Rufenacht, Bastien Chopard, "Numerical analysis of the flow pattern effect on the flow reduction performance in the cerebral aneurysm by stent implantation", *Mathematics and Computers in Simulation*, Vol 72, pp. 128--133, 2006.
- [9] D. Alemani, B. Chopard, J. Buffle and J. Galceran, "Two grid refinement methods in the Lattice Boltzmann framework for reaction-diffusion processes", *Physical Chemistry Chemical Physics*, volume 8 (35), 2006.

Full refereed papers in Conference Proceedings

- [10] D. Alemani, B. Chopard, J. Buffle and J. Galceran, "Time splitting and grid refinement methods in the Lattice Boltzmann framework for solving a reaction-diffusion process", *Proceedings of ICCS 2006*, Reading, Alexandrov, V.N.; van Albada, G.D.; Slood, P.M.A.; Dongarra, J.J. (Eds.) LCNS 3992, pp. 70-77, Springer 2006.
- [11] P. Combes, B. Chopard, J. Zory, "A conservative approach to SystemC Parallelization", *Proceedings of ICCS 2006*, Reading, Alexandrov, V.N.; van Albada, G.D.; Slood, P.M.A.; Dongarra, J.J. (Eds.), LCNS 3994, pp. 653-660, Springer 2006
- [12] B. Sonderegger, G. Bittar and B. Chopard, Antaxis, "a Simple Deterministic Phylogenetic Reconstruction Algorithm", *Poster Conference: ISMB - 2006*, <http://ismb2006.cbi.cnptia.embrapa.br/>
- [13] B. Chopard and D. Lagrava, "A Cellular Automata Model for Species Competition and Evolution", *ACRI 2006 Proceedings*, LCNS 4173, pp. 227-286, 2006.
- [14] S. Marconi and B. Chopard, *Discrete Physics*, "Cellular Automata and Cryptography", *ACRI 2006 Proceedings*, LCNS 4173, pp. 617--626, Springer 2006.
- [15] O. Marcou, S. El Yacoubi and B. Chopard, "A bi-fluid Lattice Boltzmann model for water flow in an irrigation channel", *ACRI 2006 Proceedings*, LCNS 4173, pp. 373-382, Springer 2006.
- [16] Alfons Hoekstra, Bastien Chopard, Pat Lawford, Rod Hose, Manfred Krafczyk, Joerg Bernsdorf, "Introducing Complex Automata for Modelling Multi-Scale Complex Systems", *Proceedings of the complex system conference, ECCS '06*, Oxford, Sept 2006.

Books and book chapters

- [17] *Cellular Automata*, 7th Int. Conf. on Cellular Automata for research and Industry (ACRI 2006), Perpignan, France, Sept 20-23, 2006, S. El Yacoubi, B. Chopard and S. Bandini Eds, LNCS 4173, 2006.
- [18] *International Journal of Multiscale Computational Engineering*, Vol 4 (2), 2006. V. Krzhizhanovska, B. Chopard, Y. Gorbachev, Guest Editors

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- PhD committee (external expert) for Sebastien Guerlach, EPFL

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- Ecole de printemps: GRID and P2P, 3e cycle informatique, Mars 2006, Co-chair
- ICCS 2006, SMMS workshop, Reading UK, May 2006, Co-chair
- DSFD 2006, Geneva, August 22-26, 2006, Chair
- ACRI 2006, Perpignan FR, Sept 15-18, 2006, Co-chair

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- ICCS 2006, SMMS workshop, Reading UK, May 2006
- DSFD 2006, Geneva, August 22-26, 2006
- ACRI 2006, Perpignan FR, Sept 15-18, 2006

INVITED TALKS

- Seminar CREATIS INSA Lyon, May 2006
- ICS 06 (Intercranial stenting), Hotel Wilson, Geneva, Sept 2006

FUNDED RESEARCH PROJECTS

Participation to European projects

@neurIST project (IP)

Integrated biomedical informatics for the management of cerebral aneurysms,

Period: Jan 2006-Dec 2009

28 partners

Web: <http://www.aneurist.org>

COAST project (STREP)

Complex Automata: a new framework for the simulation of complex, multiscale systems

Period: Sept 2006-Aug 2009

5 partners

Web: <http://www.complex-automata.org>

Contrat de recherche avec Cardiatis

Participation to National projects

Anataxis

Reconstruction of the tree of life with new parallel algorithm

FNRS, 2003-2006

Collaboration with SIB.

Decoding Signal Sequences

FNRS 2003-2006

Collaboration Prof Belin, Unige and SIB

Lattice Boltzmann Methods for fluid flow

FNRS, 2003-2006

Collaboration Prof. Droz (Phys Theorique, UNIGE) and S. Succi, (CNR Rome, IT)

Hydrodynamique Properties of fractal aggregates

FNRS

Collaboration with Dr S Stoll, CABE, Unige

Modeling reaction-diffusion processes in complex environmental problems

FNRS 2004-2007

Collaboration with Prof J Buffle, CABE, Unige, Prof. J. Galceran, U. Lerida, Spain

SystemC distributed simulation for 3rd and 4th generation of phone platforms

CTI project with STMicroelectronics (J. Zory)

Period: 2004-2006.

Modelling and control of water flow in open-channels by a Lattice Boltzmann Method

FNRS 2005-2007

Collaboration with S. El Yacoubi, University of Perpignan FR

DSFD-2006 conference

Collaboration with Foundation Boninchi, COMAD, Fac Science, Société académique, FNRS, participants fees

OTHERS

Refereeing

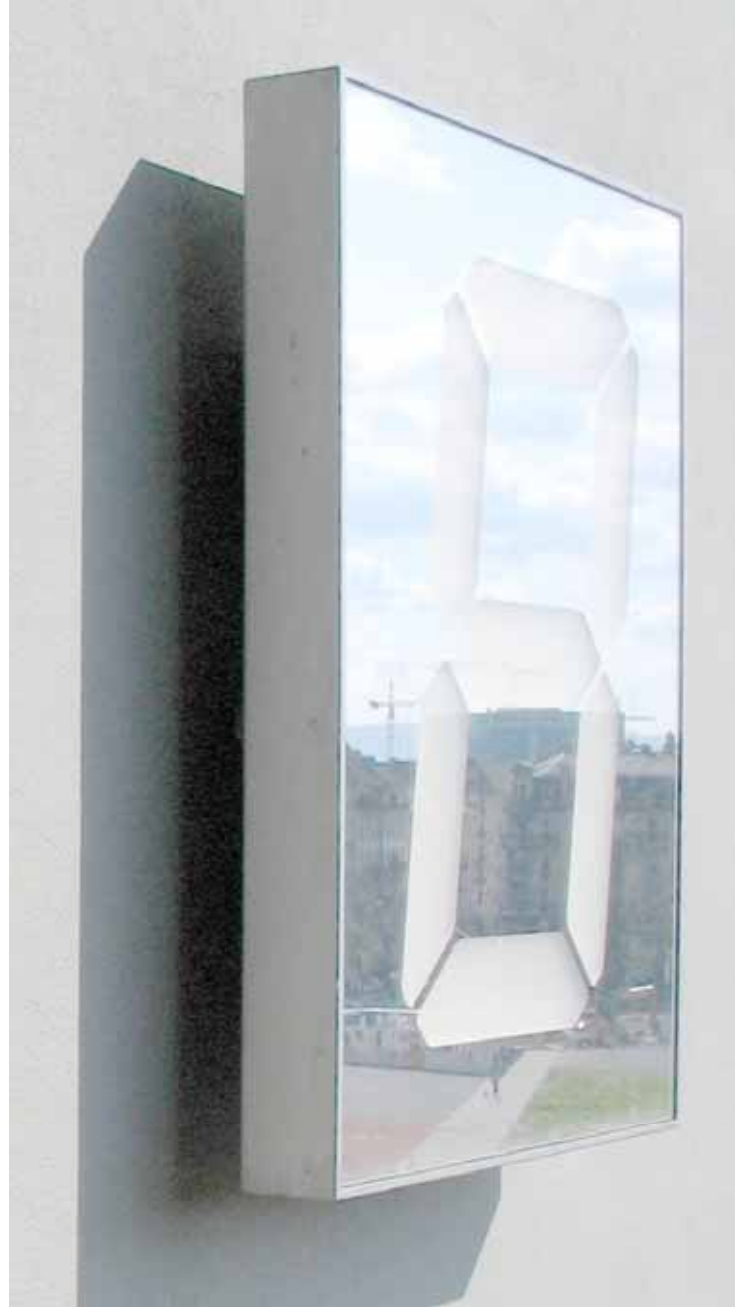
- Referee for many international journals and conferences

Editorial responsibilities

- Editor of the Int. J. unconventional computing
- Editor of the Int. J. Cellular Automata

TEACHING

- **Parallelisme**, Computer Science, Bachelor 3rd year, 28 hours + 28 hours TP, 20 students
- **Methodes heuristiques d'optimisation et d'apprentissage**, Computer Science, Master, 16 hours + 16 hours TP, 10 students, in collaboration with C Pellegrini and M Tomassini
- **Programmation Bioinformatique I**, Master in proteomique and bioinformatique, 28 hours + 52 hours TP, 15 students
- **Algorithmique**, Computer Science, Bachelor 2nd year, 14 hours + 14 hours TP, 25 students, in collaboration with J. Rolim
- **Algorithmique parallèle**, Computer Science, Master, 28 hours + 28 hours TP, 10 students
- **Methodes et simulations numériques en calcul scientifique**, Computer Science & Physics, Master, 14 hours + 14 hours TP, 10 students, in collaboration with M. Droz



Theoretical Computer Science

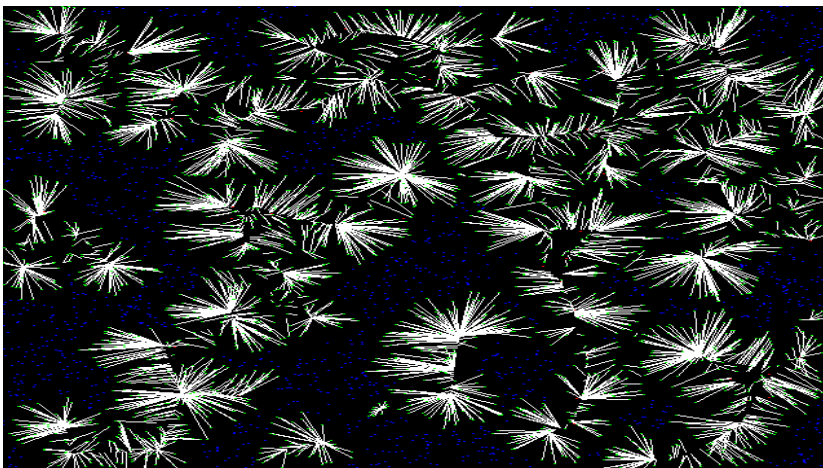
Prof. José Rolim

TCS

DOMAIN ACTIVITIES

The TCS-Sensor Lab (Theoretical Computer Science and Sensor Networks Lab) main research activities are in large measure concerned with the representation, transformation and communication properties of information systems such as ad-hoc, sensor networks and embedded systems. A certain body of knowledge emphasizing the interweaving themes of complexity and algorithms represent the research axis of theoretical computer science. Under complexity one includes questions which tasks can or cannot be performed by information systems of different aspects restricted in several resources such as running time, memory amount, energy dissipation or communication transmission. Under algorithm one includes questions regarding how efficient a task can be performed in terms of such resources. These questions are often addressed by developing models of relevant parts of information systems such as processors, their interconnections, their rules of operation, the means of communication, etc. and by the study of properties of such models.

Web: <http://tcs.unige.ch>

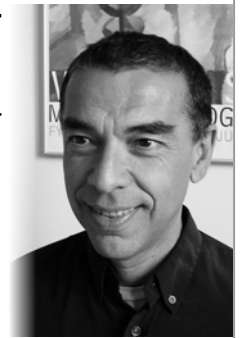


Example of a clustered sensor network

TEAM

Director

José Rolim
Full professor



Members

Dr. Pierre Leone, Assistant professor
Dr. Raphaël Chand
Dr. Taras Holotyak
Dr. Aubin Jarry,
Dr. Olivier Powell

Phd students

Matthieu Bouget
Jacques Fontignie
Andrei Marculescu
Luminita Moraru,
Michael Weiss,
Thibaud Guenegou,

PhD THESIS

- Olivier Powell, Resource-bounded Measure, Randomness and Almost Completeness in Small Complexity Classes, February 2006

LIST OF PUBLICATIONS

Refereed papers in international journals

- [1] Pierre Leone, José D. P. Rolim, Paul Albuquerque, Christian Mazza, “A framework for probabilistic numerical evaluation of sensor networks: A case study of a localization protocol”, *ACM Journal of Experimental Algorithms* 11: (2006)

Full refereed papers in Conference Proceedings

- [2] Pierre Leone, Luminita Moraru, Olivier Powell, José D. P. Rolim, « Localization Algorithm for Wireless Ad-Hoc Sensor Networks with Traffic Overhead Minimization by Emission Inhibition », *ALGOSENSORS 2006*: 119-129
- [3] Aubin Jarry, Pierre Leone, Olivier Powell, José D. P. Rolim, “An Optimal Data Propagation Algorithm for Maximizing the Lifespan of Sensor Networks”, *DCOSS 2006*: 405-421
- [4] Matthieu Bouget, Pierre Leone, José D. P. Rolim, “Numerical Estimation of the Impact of Interferences on the Localization Problem in Sensor Networks”, *WEA 2006*: 13-23
- [5] R. Chand, L. Liquori, M. Cosnard, “Resource Discovery in the Arigatoni Model”, *I2CS 2006*, 6th International Workshop on Innovative Internet Community Systems, 26th – 28th June, 2006 - Neuchâtel, Switzerland
- [6] M. Cosnard, L. Liquori, R. Chand, “Virtual Organisation in Arigatoni: the Formal Model”, *DCM 2006*: International Workshop on Development in Computational Models. *Electr. Notes Theor. Comput. Sci.*, 16th July, 2006. Venice, Italy

Books and book chapters

- [7] Josep Díaz, Klaus Jansen, José D. P. Rolim, Uri Zwick, “Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques, 9th International Workshop on Approximation Algorithms

for Combinatorial Optimization Problems”, *APPROX 2006 and 10th International Workshop on Randomization and Computation*, *RANDOM 2006*, Barcelona, Spain, August 28-30 2006, *Proceedings Springer 2006*

- [8] Sotiris E. Nikolettseas, José D. P. Rolim, “Algorithmic Aspects of Wireless Sensor Networks”, *Second International Workshop, ALGOSENSORS 2006*, Venice, Italy, July 15, 2006, *Revised Selected Papers Springer 2006*

Research and technical reports

- [9] O. Powell, A. Jarry, P. Leone and J. Rolim, “Gradient Based Routing in Wireless Sensor Networks: a Mixed Strategy”, *arXiv technical report*.
- [10] Jacques Fontignie, Andrei Marculescu, « Tutorial 1: AlgoSenSim, Running a simple flooding »
- [11] Jacques Fontignie, Andrei Marculescu, « Tutorial 2: AlgoSenSim, Implementing a Routing Algorithm »
- [12] Jacques Fontignie, Andrei Marculescu, « Tutorial 3: AlgoSenSim, Implementing DV-HOP »
- [13] Jacques Fontignie, Andrei Marculescu, « Tutorial 4: AlgoSenSim, Creating animations »
- [14] Jacques Fontignie, Andrei Marculescu, « Tutorial 5: AlgoSenSim, Creating experiments »
- [15] Jacques Fontignie, Andrei Marculescu, « Tutorial 6: AlgoSenSim, GUI »
- [16] Jacques Fontignie, Andrei Marculescu, « Tutorial 7: AlgoSenSim, Optimizations »

INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES

- DCOSS 06 IEEE International Conference on Distributed Computing in Sensor Systems, San Francisco , June 18 - 20, 2006 – chair steering committee: Jose Rolim
- APPROX 2006 – 9th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems – Barcelona, August 2006 - chair steering committee: Jose Rolim
- RANDOM 2006 - 10th International Workshop on Randomization and Computation – Barcelona – August 2006 - chair steering committee: Jose Rolim
- WEA 2006 – 5th International Workshop on Experimental Algorithms -May 24-27, 2006, Menorca Island, Spain - - chair steering committee: Jose Rolim
- ALGOSENSORS 2006 - International Workshop on Algorithmic Aspects of Wireless Sensor Networks - July 15 2006, Venice, Italy.- member steering committee: Jose Rolim
- IPDPS 06 - 20th IEEE International Parallel & Distributed Processing Symposium. - 25 April - 29 April 2006 . Rhodes Island, Greece - member steering committee: Jose Rolim
- IFIP - The Swiss IFIP Committee (SIC) - TC1 Foundations of Computer Science – delegate: Jose Rolim

CONFERENCE ORGANIZATION AS CHAIR OR CO-CHAIR

- DCOSS 06 IEEE International Conference on Distributed Computing in Sensor Systems, San Francisco , June 18 - 20, 2006 – chair steering committee: Jose Rolim
- APPROX 2006 – 9th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems – Barcelona, August 2006 - chair steering committee: Jose Rolim
- RANDOM 2006 - 10th International Workshop on Randomization and Computation – Barcelona – August 2006 - chair steering committee: Jose Rolim
- WEA 2006 – 5th International Workshop on Experimental Algorithms -May 24-27, 2006

- Menorca Island, Spain - - chair steering committee: Jose Rolim
- ALGOSENSORS 2006 - International Workshop on Algorithmic Aspects of Wireless Sensor Networks - July 15 2006, Venice, Italy.- chair program committee: Jose Rolim

MEMBER OF CONFERENCE PROGRAM COMMITTEES

- ALGOSENSORS 2006 - International Workshop on Algorithmic Aspects of Wireless Sensor Networks - July 15 2006, Venice, Italy.- chair program committee: Jose Rolim
- MFCS 2006 -31st International Symposium on Mathematical Foundations of Computer Science August 28 - September 1, 2006 – Slovakia - member program committee: Jose Rolim
- WEA 2006 – 5th International Workshop on Experimental Algorithms -May 24-27, 2006, Menorca Island, Spain - member program committee: Jose Rolim

INVITED TALKS

- 4th DYNAMO Workshop- Foundations and Algorithms for Dynamic Network - September 17, 2006, Stockholm, Sweden – Invited talk: An Optimal Data Propagation Algorithm for Maximizing the Lifespan of Sensor Networks- speaker: Jose Rolim

FUNDED RESEARCH PROJECTS

Participation to European projects

AEOLUS

Integrated Project IST-15964

Algorithmic Principles for Building Efficient Overlay Computers

Period: September 2005 - August 2009

Partners: University of Patras (GR), Coordinator, Telecom Italia Learning Services S.p.A. (IT), Centre National de la Recherche Scientifique (FR), University of Paderborn (D), Research Academic Computer Technology Institute (GR), Università degli Studi di Salerno (IT), University of Ioannina (GR), Centre Universitaire d'Informatique (CH), Max-Planck Institut für Informatik (D), Christian-Albrechts-Universität zu Kiel (D), Università degli Studi di Roma "Tor Vergata" (IT), University of Athens (GR), Università degli Studi di Padova (IT), Eidgenössische Technische Hochschule Zürich (CH), Universitat Politècnica de Catalunya (ES) Università degli Studi di Roma "La Sapienza" (IT), Katholieke Universiteit Leuven (B), Institut National De Recherche en Informatique et en Automatique (FR), DIMATIA, Charles University (CZ), University of Cyprus (CY), Cybernetica (EE)

Website: <http://www.ceid.upatras.gr/aeolus/>

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SER – COST295

Modelisation of dynamical aspects of wireless sensor networks ,no Co5.0030

Period: October 2005 – September 2007

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SER – COST293

Evolving Graphs for Communication Network Design, no Co6.001

Period: October 2006 – September 2008

Participation to National projects

FNRS – Power Aware Computing

200021-104017

Period: June 2004 – January 2007

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FNRS - Games and computational complexity

Period: October 2004 – September 2006

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FNRS – Games and Complexity: Applications

Period: October 2006 – September 2007

TEACHING

- **Langages Formels**, Computer Science, Bachelor, 56 hours, Summer semester, Jose Rolim
- **Calculabilité et Complexité**, Computer Science, Bachelor, 56 hours, Winter semester, Jose Rolim
- **Cryptographie**, Computer Science, Bachelor, 56 hours, Summer semester, Eduardo Solana et Jose Rolim
- **Algorithmique**, Computer Science, Bachelor, 56 hours, Summer semester, Jose Rolim (with Bastien Chopard)
- **Algorithmique pour le web**, Computer Science, Master, 56 hours, Winter semester, Jose Rolim
- **Introduction à l'informatique pour les biologistes**, 8 hours, Pierre Leone
- **Elements of multiuser information theory and wireless communications**, Computer Science, Master, 84 hours, Pierre Leone, Sviatoslav Voloshynovskyy and Oleksiy Koval
- **Programmation des systèmes**, Computer Science, Bachelor, 56 hours, Pierre Leone
- **Réseaux**, Computer Science, Bachelor, 56 hours, Pierre Leone
- **Systèmes concurrents et distribués**, Computer Science, Master, 56 hours, Pierre Leone
- **Séminaire avancé TCSensor**, Computer Science, 56 hours, Phd students course, Jose Rolim and Pierre Leone



Financial Report

2006

CUI

Staff	CHF 947'991
◇ Academic	CHF 266'541
◇ Administrative and Technical	CHF 527'725
◇ Employer's social contributions	CHF 153'725
Operating costs - Investment	CHF 106'049
Operating costs - Others	CHF 251'000
Library	CHF 85'000
CUI SUBTOTAL	CHF 1'390'040

COMPUTER SCIENCE DEPARTMENT, FACULTY OF SCIENCES

Staff	CHF 2'609'096
◇ Academic	CHF 2'041'135
◇ Administrative and Technical	CHF 144'045
◇ Employer's social contributions	CHF 423'916
Operating costs - Investment	CHF 85'033
Operating costs - Others	CHF 19'076
DEPARTMENT SUBTOTAL	CHF 2'713'205

INFORMATION SYSTEMS DEPARTMENT, FACULTY OF ECONOMIC AND SOCIAL SCIENCES

Staff	CHF 1'692'989
◇ Academic	CHF 1'377'523
◇ Administrative and Technical	CHF 40'360
◇ Employer's social contributions	CHF 275'106
Operating costs - Investment	CHF 14'400
Operating costs - Others	CHF 7'000
DEPARTMENT SUBTOTAL	CHF 1'714'389

LINGUISTICS DEPARTMENT, FACULTY OF HUMANITIES

Staff- Academic , incl. Charges (estimation)	CHF 514'753
Operating costs	CHF 25'000
DEPARTMENT SUBTOTAL	CHF 539'753

**TOTAL BUDGET****CHF 6'357'387**

COMPUTER SCIENCE DEPARTMENT, FACULTY OF SCIENCES

1 professor position + 1 assistant position	CHF 324'775
UE-funded Projects	CHF 405'115
Swiss-funded Projects	CHF 1'109'202
DEPARTMENT SUBTOTAL	CHF 1'839'092

INFORMATION SYSTEMS DEPARTMENT, FACULTY OF ECONOMIC AND SOCIAL SCIENCES

UE-funded Projects	CHF 1'371'036
Swiss-funded Projects	CHF 537'603
DEPARTMENT SUBTOTAL	CHF 1'908'639

LINGUISTICS DEPARTMENT, FACULTY OF HUMANITIES

Swiss-funded Projects	CHF 243'000
DEPARTMENT SUBTOTAL	CHF 243'000

TOTAL CREDIT**CHF 3'990'731**



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CH-1227 Carouge

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