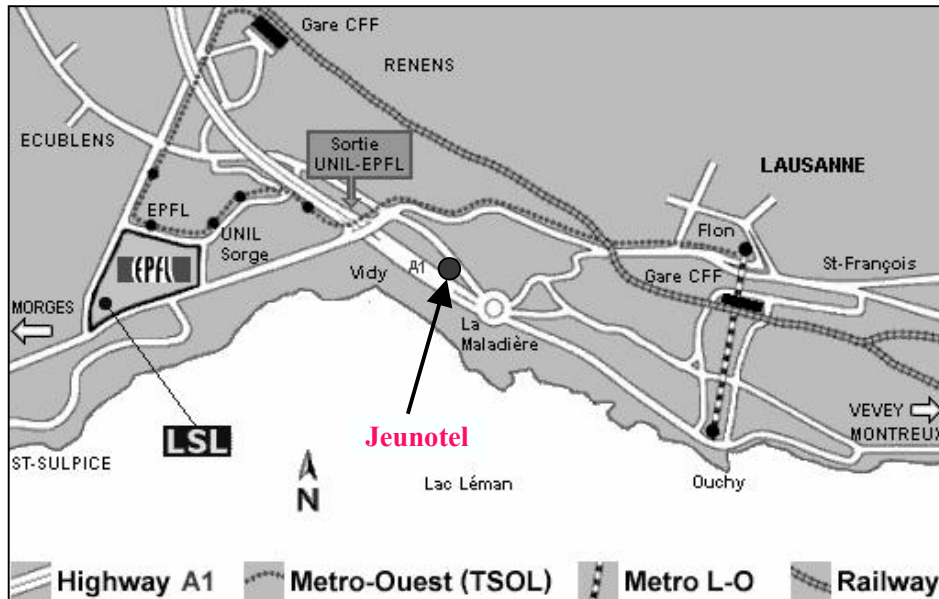


MAP OF LAUSANNE AND HOTELS



How to reach EPFL by public transport:

From Lausanne main station (gare CFF), take the metro (cablecar, not bus!) upwards to “Flon”, then change to the metro (also called TSOL or M1) in the direction of “Renens”. Get out at the “EPFL” stop (~15 minutes travel time).

Car parkings are indicated on the map. Parking vouchers may be purchased at the registration desk.



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PROGRAM AT A GLANCE

	Jan 29, 2004	Jan 30, 2004
8:00	Registration	Session 3: Bio-Inspired Software Systems
9:00	Opening Remarks Keynote Address I	
10:00		Special Talk
11:00	Keynote Address II	Session 4: Bio-Inspired Image Processing
12:00		
13:00	Session 1: Bio-Inspired Robotics	Session 5: Biotechnology for IT Evolution
14:00		Session 6: Bio-Inspired Distrib./ Parallel Processing
15:00	Session 2: Bio-Inspired Networking	Session 7: Bio-Inspired Hardware Systems
16:00		
17:00	Poster Spotlights Poster Session	Closing Remarks & Farewell Party
18:00		
19:00		
20:00	Banquet	
21:00		

TECHNICAL PROGRAM

THURSDAY, JANUARY 29th, 2004

8:30am-9:00am Registration

9:00am-9:30am Opening Remarks

9:30am-10:30am Keynote Address I

- The Architecture of Complexity: From the Internet to Metabolic Networks, *Albert-László Barabási (University of Notre Dame, USA)*

10:30am-11:00am Break

11:00am-12:00am Keynote Address II

- www.siliconcell.net: Bringing Bits and Chips to Life, *Hans V. Westerhoff (Free University, Amsterdam)*

12:00am-13:30pm Lunch

13:30pm-14:50pm Session 1: Bio-Inspired Robotics

- A Study on Designing Robot Controllers by Using Reinforcement Learning with Evolutionary State Recruitment Strategy, *Toshiyuki Kondo and Koji Ito (Tokyo Institute of Technology, Japan)*
- Movement Generation and Control with Generic Neural Microcircuits, *Prashant Joshi and Wolfgang Maass (Technische Universitaet Graz, Austria)*
- Efficiency and Task Allocation in Prey Retrieval, *Thomas H. Labella, Marco Dorigo, and Jean-Louis Deneubourg (Université Libre de Bruxelles, Belgium)*
- Anatomy and Physiology of an Artificial Vision Matrix, *Andrew Vardy, and Franz Oppacher (Carleton University, Canada)*

14:50pm-15:20pm Break

15:20pm-16:50pm Session 2: Bio-Inspired Networking

- An Ant Inspired Technique for Storage Area Network Design, *Elizabeth Dicke, Andrew Byde, Dave Cliff, and Paul Layzell (Hewlett-Packard Labs Europe, UK)*
- Media Streaming on P2P Networks with Bio-inspired Cache Replacement Algorithm, *Masahiro Sasabe, Naoki Wakamiya, Masayuki Murata, and Hideo Miyahara (Osaka University, Japan)*
- An Artificial Immune System Approach to Misbehavior Detection in Mobile Ad-Hoc Networks, *Jean-Yves Le Boudec and Slaviša Sarafijanović (Swiss Federal Institute of Technology, Switzerland)*
- Scalable and Robust Scheme for Data Fusion in Sensor Networks, *Naoki Wakamiya and Masayuki Murata (Osaka University, Japan)*

16:50pm-17:30pm Poster Spotlights

17:30pm-18:30pm Poster Session

TECHNICAL PROGRAM

See next pages for a paper list. Posters will be up during the whole meeting.

19:30pm-22:00pm Banquet

FRIDAY, JANUARY 30th, 2004

8:30am-10:00am Session 3: Bio-Inspired Software Systems

- Biologically Inspired Reinforcement Learning: Reward-based Decomposition of a Hierarchical Reinforcement Learning System, *Weidong Zhou and Richard Coggins (The University of Sydney, Australia)*
- Dynamic Self-Assembly and Computation: From Biological to Information Systems, *Ann M. Bouchard and Gordon C. Osbourn (Sandia National Laboratories, U.S.A.)*
- Implementation and Evaluation of a System to Support Human Relationship Formation in Networked Virtual Space, *Yoshiharu Yoshimoto, Yuichi Itoh, Yoshifumi Kitamura, and Fumio Kishino (Osaka University, Japan)*
- Biologically Plausible Speech Recognition with LSTM Neural Nets, *Alex Graves, Douglas Eck, Nicole Beringer, and Juergen Schmidhuber (Istituto Dalle Molle di Studi sull'Intelligenza Artificiale, Switzerland)*

10:00am-10:30am Break

10:30am-10:45am Special Talk

- Bio-Inspired Intelligent Information Systems: a New European Initiative, *Pekka Karp (European Commission)*

10:45am-12:00am Session 4: Bio-Inspired Image Processing

- Biologically Inspired Image Compression in Biomedical High-Throughput Screening, *Udo Seifert (Leibniz Institute of Plant Genetics and Crop Plant Research, Germany)*
- Naïve Algorithms for Keyphrase Extraction and Text Summarization from a Single Document inspired by the Protein Biosynthesis Process, *Daniel Gayo-Avello, Darío Álvarez-Gutiérrez, and José Gayo-Avello (University of Oviedo, Spain)*
- Biologically Motivated Trainable Selective Attention Model Using Adaptive Resonance Theory Network, *Sang-Bok Choi, Sang-Woo Ban, Minho Lee, Jang-Kyoo Shin, Dae-Wha Seo (Kyungpook National University, Korea), and Hyun-Seung Yang (Korea Advanced Institute of Science and Technology, Korea)*

12:00am-13:30pm Lunch

13:30pm-14:40pm Session 5: Biotechnology for IT Evolution

- Object-oriented Specification of Complex Bio-Computing Processes: a Case Study of a Network of Proteolytic Enzymes, *Jacqueline Signorini and Patrick Greussay (Université Paris-8, France)*
- Analysis of Responses of Complex Bionetworks to Changes in Environmental Conditions, *Hiroshi Shimizu, Takashi Hirasawa, Keisuke Nagahisa, and Suteaki Shioya (Osaka University, Japan)*

TECHNICAL PROGRAM

- Experimental Molecular Evolution Showing Flexibility of Fitness Leading to Coexistence and Diversification in Biological System, *Akiko Kashiwagi, Wataru Noumachi, Masato Katsuno, Mohammad T. Alam, Itaru Urabe (Osaka University, Japan), and Tetsuya Yomo (Osaka University, The University of Tokyo, and JST, Japan)*

14:40pm-15:50pm Session 6: Bio-Inspired Distributed/Parallel Processing

- An Adaptive Mechanism for Epidemic Communication, *Tatsuhiro Tsuchiya and Tohru Kikuno (Osaka University, Japan)*
- The Blob Division: A “Hardware-Free”, Time Efficient, Self-reproduction on 2D Cellular Automaton, *Frédéric Gruau and Gabriel Moszkowski (Université Paris-Sud, France)*
- Distributed Central Pattern Generator Model for Robotics Application Based on Phase Sensitivity Analysis, *Jonas Buchli and Auke Jan Ijspeert (Swiss Federal Institute of Technology, Switzerland)*

15:50pm-16:10pm Break

16:10pm-17:20pm Session 7: Bio-Inspired Hardware Systems

- Firing Proprieties of an Adaptive Analog VLSI Neuron, *Daniel Ben Dayan Rubin (Politecnico di Milano, Italy and UNI/ETH Zurich, Switzerland), Elisabetta Chicca, and Giacomo Indiveri (UNI/ETH Zurich, Switzerland)*
- Embryonic Machines that Divide and Differentiate, *Daniel Mange, André Stauffer, Enrico Petraglio, and Gianluca Tempesti (Swiss Federal Institute of Technology, Switzerland)*
- Artificial Cellular Division by Self-Inspection, *Enrico Petraglio, Daniel Mange, André Stauffer, and Gianluca Tempesti (Swiss Federal Institute of Technology, Switzerland)*

17:20pm-17:30pm Closing Remarks

17:30pm-18:30pm Farewell Party

POSTER PAPERS

(Biotechnology for IT Evolution)

- Self-prediction in Echo State Networks, *Norbert M. Mayer and Matthew Browne (GMD-Japan Research Laboratory, Japan)*
- Learning Bayesian Networks by Lamarckian Genetic Algorithm and its Application to Yeast Cell-Cycle Gene Network Reconstruction from Time-Series Microarray Data, *Sun-Chong Wang and Sai-Ping Li (Academia Sinica, Taiwan)*
- Towards Cortex Sized Attractor ANN, *Christopher Johansson and Anders Lansner (Royal Institute of Technology, Sweden)*

(Bio-Inspired Hardware Systems)

- A Hardware Implementation of a Network of Functional Spiking Neurons with Hebbian Learning, *Andrés Upegui, Carlos Andrés Peña-Reyes, Eduardo Sánchez (Swiss Federal Institute of Technology, Switzerland)*

(Bio-Inspired Software Systems)

- Spatial Tangible User Interfaces for Cognitive Assessment and Training, *Ehud Sharlin, Yuichi Itoh (Osaka University, Japan), Benjamin Watson (Northwestern University, USA), Yoshifumi Kitamura (Osaka University, Japan), Steve Sutphen, Lili Liu (University of Alberta, Canada), Fumio Kishino (Osaka University)*
- Biologically Inspired Computer Virus Detection System, *Hyungjoon Lee (Ajou University, Republic of Korea), Wonil Kim (Sejong University, Republic of Korea), Manpyo Hong (Ajou University, Republic of Korea)*
- Explaining Low-Level Brightness-Contrast Illusions Using Disinhibition, *Yingwei Yu, Takashi Yamauchi, and Yoonsuck Choe (Texas A&M University, USA)*
- Autonomous Acquisition of the Meaning of Sensory States Through Sensory-Invariance Driven Action, *Yoonsuck Choe and S. Kumar Bhamidipati (Texas A&M University, USA)*

(Bio-Inspired Distributed/Parallel Processing)

- Ant-Based Approach to Mobile Agent Traversal, *Taisuke Izumi, and Toshimitsu Masuzawa (Osaka University, Japan)*

(Bio-Inspired Networking)

- Particle Swarm Optimization for Topological Design of Communication Networks, *Ji Chunlin, Zhang Yangyang, Gao Shixing (Northeastern University, China), Xu Weiwei (University of Twente, The Netherlands), Yuan Ping, and Wang Guangxing (Northeastern University, China)*

(Self-* Systems)

- A Practical Evidence for the No Free Lunch theorems, *Mihai Oltean (Babeş-Bolyai University, Romania)*
- How Collective Intelligence Emerge in Complex Environment?, *Satoshi Kurihara, Kensuke Fukuda, Toshio Hirotsu, Osamu Akashi, Shinya Sato, and Toshiharu Sugawara (NTT Network Innovation Labs, Japan)*
- The Genealogy of Biomimetics: Half a Century's Quest for Dynamic IT, *Mikkel Holm Sørensen (IT University of Copenhagen, Austria)*

Bio-ADIT 2004

Final Program

The First International Workshop on Biologically Inspired Approaches to Advanced Information Technology