

Résumé

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Born: July 31, 1982
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Academic Interests

Computer Vision and Manifold Learning especially where applicable to Medical Images.
I have also worked in Computer Networking (Congestion Control).

Academic Degrees

I am currently a Ph.D. Candidate at Washington University in St. Louis.

December 2007: M.S. Computer Science from Washington University in St. Louis.

December 2003: B.S. Math and Computer Science (magna cum laude) from Colorado State University.

Publications

- [1] Manfred Georg and Robert Pless. Fitting Parametric Road Models to Spatio-temporal Derivatives. In *Machine Learning for Vision-based Motion Analysis (ICCV Workshop)*, September 2009.
- [2] Manfred Georg and Sergey Gorinsky. Congestion Control with a Misbehaving Receiver: Robust TFRC and Other Protocols. *Journal of Internet Engineering*, 2009. Accepted.
- [3] Manfred Georg, Richard Souvenir, Andrew Hope, and Robert Pless. Manifold Learning for 4D CT Reconstruction of the Lung. In *Workshop on Mathematical Methods in Biomedical Image Analysis (CVPR Workshop)*, June 2008.
- [4] Manfred Georg, Richard Souvenir, Andrew Hope, and Robert Pless. Simultaneous Data Volume Reconstruction and Pose Estimation from Slice Samples. In *Computer Vision and Pattern Recognition*, June 2008.
- [5] Sergey Gorinsky, Manfred Georg, Maxim Podlesny, and Christoph Jechlitschek. A Theory of Load Adjustments and its Implications for Congestion Control. *Journal of Internet Engineering*, 1(2):82–93, 2007.
- [6] Manfred Georg, Christoph Jechlitschek, and Sergey Gorinsky. Improving Individual Flow Performance with Multiple Queue Fair Queuing. In *International Workshop on Quality of Service*, June 2007.
- [7] Andrew J Hope, Manfred Georg, Jonathon J Cannon, J Hubenschmidt, Wei Lu, Daniel A Low, and Robert B Pless. Applications of Manifold Learning Techniques in 4D-CT reconstruction. In *International Conference on the use of Computers in Radiation Therapy*, June 2007. Reviewer's Choice.
- [8] Manfred Georg, Jonathon J Cannon, Andrew J Hope, Wei Lu, Daniel A Low, and Robert B Pless. Automating 4D CT Reconstruction Using Manifold Learning. In *American Radium Society Annual Meeting*, May 2007.
- [9] C. Stringfellow, C.D. Amory, D. Potnurri, M. Georg, and A. Andrews. Comparison of Software Architecture Reverse Engineering Methods. *Journal of Information and Software Technology*, (7):484–497, 2006.
- [10] Manfred Georg and Sergey Gorinsky. Protecting TFRC from a Selfish Receiver. In *Proceedings of the IEEE International Conference on Networking and Services*, October 2005.
- [11] C. Stringfellow, C.D. Amory, D. Potnurri, M. Georg, and A. Andrews. Deriving Change Architectures from RCS History. In *Proceedings of the IASTED International Conference on Software Engineering and Applications*, November 2004.
- [12] Horst Hahn and Manfred Georg. Fractal Aspects of Global and Local Optimization Schemes in Constrained Construction of Three-Dimensional Vascular Systems. In *Proceedings of the Fractals in Biology and Medicine Conference*, March 2003.

Work Experience

Computer Vision (Manifold Learning)

Fall 2006 - Present

Several Projects: (1) From a set of medical images find both the tissue structure and the motion due to physiological activity (represented as a B-spline deformation). (2) Develop algorithms for Manifold Learning when one of the output dimensions is known. For example, find the inherent variations in a lung when given both medical images and a belt reading of lung volume. (3) Fit snake models directly to motion vectors. Usable for extracting parameterizations of roads from stationary video.

Advisor: **Professor Robert Pless**

pless@cse.wustl.edu

Washington University in St. Louis

Networking (Congestion Control)

Fall 2004 - Spring 2006

Developed a congestion control protocol similar to TFRC (TCP Friendly Rate Control) which is robust to receiver misbehavior. And, I developed a router queuing discipline to ensure end-to-end fairness.

Advisor: **Professor Sergey Gorinsky**

gorinsky@arl.wustl.edu

Washington University in St. Louis

Internships

AT&T Labs Research

Summer 2006

Developed metrics for measuring and predicting the under-utilization of VPN links in large networks.

Supervisor: **Dr. K. K. Ramakrishnan**

kkrama@research.att.com

MeVis (Medical Diagnostic Systems and Visualization), Bremen, Germany

Summer 2003

Modeled vascular systems in the human body from an optimality standpoint.

Supervisor: **Dr. Horst Hahn**

hahn@mevis.de

Technical Programming Committee Membership

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| ICAS (International Conference on Autonomic and Autonomous Systems) | 2006-present |
| ICNS (International Conference on Networking and Services) | 2006-present |
| SOAS (Self-Organization and Autonomic Systems in Computing and Communications) | 2006-present |
| ICABS (International Conference on Adaptive Business Systems) | 2007-present |

Skills

Extensive knowledge of the Linux operating system and experience with: C, C++, Matlab, Java, Perl, R (SPlus).

I am fluent in Italian and German in addition to natively speaking English.

Leadership

March 2009 - Present: on Board of Directors of Shinzo Sangha, a Zen Buddhist meditation group.

February 2007 - February 2009: Treasurer for the CSE Graduate Student Association.

Awards

Fall 2002, placed 222.5 in the William Lowell Putnam Exam with a score of 40.