

# Résumé

Manfred Georg  
710 Eastgate Apt 1-S  
Saint Louis, MO 63130 USA

mgeorg@cse.wustl.edu  
<http://www.cse.wustl.edu/~mgeorg>

Born: July 31, 1982  
Citizenship (dual): United States, Italy  
Phone: +1 (314) 651-3148

## 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

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.