

# 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: Manifold Learning, Medical Image Analysis  
I have worked in Computer Networking (Congestion Control) and  
briefly in Software Engineering (Testing).

## 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, 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*, June 2008.
- [2] 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.
- [3] 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.
- [4] 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.
- [5] 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.
- [6] 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.
- [7] 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.
- [8] Manfred Georg and Sergey Gorinsky. Protecting TFRC from a Selfish Receiver. In *Proceedings of the IEEE International Conference on Networking and Services*, October 2005.
- [9] 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.
- [10] 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.

## 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

# Work Experience

## Computer Vision (Manifold Learning)

Fall 2006 - Present

Using a set of medical images (each of which may not capture the entire region of interest) we find both the tissue structure and motion due to physiological activity such as breathing and heartbeat. Our model is comprised of a parameterized set of B-spline deformations of a reference volume, allowing us to describe arbitrary deformations of a tissue structure.

Advisor: **Professor Robert Pless**  
pless@cse.wustl.edu  
Washington University in St. Louis

## Networking (Congestion Control)

Fall 2004 - Spring 2006

I 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 over-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 using a completely optimality driven method.

Supervisor: **Dr. Horst Hahn**  
hahn@mevis.de

## CS department at CSU

Summer 2000

Created metrics to determine the optimal times to change software development production phases.

Supervisor: **Professor Anneliese Andrews**  
andrews@cs.du.edu

## Statistics department at CSU

Summer 1998

Developed a Java applet and accompanying C++ cgi for the automated submission and grading of homework assignments.

Supervisor: **Dr. Hariharan Iyer**  
hari@stat.colostate.edu

## Skills

Extensive knowledge of the Linux operating system and proficiency in the following computer languages and packages: C, C++, Java, Perl, R (SPlus), Matlab.

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

## Leadership

### February 2007 - Present

Treasurer for the CSE Graduate Student Association at Washington University in St. Louis.

### September 2002 - December 2003

Officer and Webmaster for the Math Club of Colorado State University.

## Academic Awards

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

Scholarships which in sum completely covered the cost of attending Colorado State University.