

CLIFFORD ALAN SHAFFER

Associate Professor
Department of Computer Science
Virginia Polytechnic Institute
and State University
Blacksburg, VA 24061
Office Phone: (540) 231-4354

Home address:
249 Brookside Ln
Newport, VA 24128
Home Phone: (703) 544-7254
Email: shaffer@cs.vt.edu

EDUCATION:

BS in Computer Science: University of Maryland, UMCP, 1980.
MS in Computer Science: University of Maryland, UMCP, 1982.
PhD in Computer Science: University of Maryland, UMCP, 1986.

EMPLOYMENT:

8/93 – present: Associate Professor, Computer Science Department, VPI & SU
9/87 – 8/93: Assistant Professor, Computer Science Department, VPI & SU
8/86 – 8/87: Research Associate, Center for Automation Research, U. of Md.

FIVE RELATED PUBLICATIONS:

M. Vass, N. Allen, C.A. Shaffer, N. Ramakrishnan, L.T. Watson, and J.J. Tyson, The JigCell Model Builder and Run Manager, *Bioinformatics* 20, 18(2004), 3680–3681.

N.A. Allen, L. Calzone, K.C. Chen, A. Ciliberto, N. Ramakrishnan, C.A. Shaffer, J.C. Sible, J.J. Tyson, M.T. Vass, L.T. Watson, and J.W. Zwolak, Modeling Regulatory Networks at Virginia Tech, *OMICS, A Journal of Integrative Biology* 7, 3(2003), 285–299.

N.A. Allen, C.A. Shaffer, M.T. Vass, N. Ramakrishnan, and L.T. Watson, Improving the Development Process for Eukaryotic Cell Cycle Models with a Modeling support environment, *Simulation* 79, 12(Dec 2003), 674–688.

M. Vass, J.M. Carroll, and C.A. Shaffer, Supporting Creativity in Problem Solving Environments, *Proceedings of the Fourth Creativity & Cognition Conference*, Loughborough, Leicestershire, UK, October 2002, 31–37.

J. He, L.T. Watson, N. Ramakrishnan, C.A. Shaffer, A. Verstak, J. Jiang, K. Bae, and W.H. Tranter, Dynamic Data Structures for a Direct Search Algorithm, *Computational Optimization and Applications* 23 1(October 2002), 5–25.

FIVE OTHER SIGNIFICANT PUBLICATIONS:

J. He, A. Verstak, L. T. Watson, C. A. Stinson, N. Ramakrishnan, C. A. Shaffer, T. S. Rappaport, C. R. Anderson, K. Bae, J. Jiang, and W. H. Tranter, Globally optimal transmitter placement for indoor wireless communication systems, *IEEE Transactions on Wireless Communications* 3, (2004) 1906–1911.

R. Dymond, V. Lohani, D. Kibler, D. Bosch, E.J. Rubin, R. Dietz, J. Chanut, C. Speir, C.A. Shaffer, N. Ramakrishnan, and L.T. Watson, From Landscapes to Waterscapes: A PSE for Landuse Change Analysis, *Engineering with Computers* 19, (2003), 9–25.

A. Verstak, N. Ramakrishnan, L.T. Watson, J. He, C.A. Shaffer, K.K. Bae, J. Jiang, W.H. Tranter, and T.S. Rappaport, BSML: A Binding Schema Markup Language for Data Interchange in PSEs, *Scientific Programming* 11, 3(August 2003), 199–224.

J.M.A. Begole, C.A. Struble, C.A. Shaffer, and R.L. Smith, "System Resource Sharing for Synchronous Collaboration," *IEEE Transactions on Networking* 9, 6(Dec 2001) 833-843.

C.A. Shaffer, *A Practical Introduction to Data Structures and Algorithm Analysis: Second Edition*, Prentice Hall, Upper Saddle River, NJ, 2001.

RECENT AWARDS

2001-2005 J.J. Tyson, B. Novak, F.R. Cross, M.D. Mendenhall, J.C. Sible, K.C. Chen, C.A. Shaffer, L.T. Watson, and N. Ramakrishnan, "The Eukaryotic Cell Cycle as a Test Case for Modeling Cellular Regulation in a Collaborative PSE," Defense Advanced Research Projects Agency: \$2,000,000.

2001-2003 J.J. Tyson, L.T. Watson, C.A. Shaffer, N. Ramakrishnan, J.C. Sible, K.C. Chen P. Mendes, L. Loew, and B. Novak, "Problem Solving Environment for Modeling the Cell Cycle," National Institute of General Medical Sciences, NIH: \$150,000.

2001-2002 J.J. Tyson, C.A. Shaffer, J.C. Sible, N. Ramakrishnan, L.T. Watson, and D.G. Kafura, "Biocomplexity Incubation Activity: A Collaborative PSE for Computational Modeling of Eukaryotic Cell Cycle Controls," NSF: \$99,965.

2000-2001 C.A. Shaffer, "Virginia Tech Computer Science Department Support for ADOPTTECH STTR Phase II Proposal," ADOPTTECH Corp: \$53,374.

1999-2002 T.S. Rappaport, C.A. Shaffer, W. Tranter, L.T. Watson, N. Ramakrishnan, and D.G. Kafura, "A Collaborative Problem Solving Environment for Modeling of Broadband Wireless Communications Systems": NSF, \$1,000,000.

1999 D. Bosch, L.T. Watson, N. Ramakrishnan, C.A. Shaffer, R. Dymond, D. Kibler, and D. Orth, "Toward Leadership in Problem Solving Environments for Ecosystem Assessment, Mangement and Policy": APIRES/Virginia Tech, \$48,600.

SYNERGISTIC ACTIVITIES

Project GeoSim website (geosim.cs.vt.edu): A collection of simulations for use in introductory geography courses. This software, sponsored by NSF and FIPSE, has won a best paper award (L.W. Carstensen, Jr., C.A. Shaffer, R.W. Morrill and E.A. Fox, **GeoSim**: A GIS-based simulation laboratory for introductory geography, *Journal of Geography* 92, 5(Sep/Oct 1993), 217-222) and an Ames Laboratory award for computational science education. It has been used by hundreds of thousands of students around the world.

Statistics Activity-Based Learning Environment **SABLE** (<http://simon.cs.vt.edu/SoSci>), a collection of tutorials and Java applets for teaching introductory statistics. This project was supported by FIPSE.

COLLABORATORS & OTHER AFFILIATIONS

Collaborators outside of Virginia Tech within the past 48 months: Ted Rappaport, UT.

PhD Advisor: Hanan Samet, University of Maryland

Recent PhD Students: James M.A. Begole, SUN Microsystems

Current PhD Students: Marc Vass, Nickolas Allen, Liya Thomas, Ranjit Randhawa

MS students who completed degree in past 5 years: Amit Goel, Ali Zafir, Purvi Saraiya, Dhananjay Mishra