CLIFFORD ALAN SHAFFER

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Education:

- BS in Computer Science: University of Maryland, College Park, 1980.
- MS in Computer Science: University of Maryland, College Park, 1982.
- PhD in Computer Science: University of Maryland, College Park, 1986.

Professional positions held:

Professor (9/87 – present)
Department of Computer Science, Virginia Polytechnic Institute & State University.
Interdisc. Program in Genetics, Bioinformatics, and Computational Biology, 7/04 – present.
Research Associate (8/86 – 8/87)
Center for Automation Research, University of Maryland.

FIVE RELATED PUBLICATIONS:

1. C.A. Shaffer, V. Karavirta, A. Korhonen and T.L. Naps, "OpenDSA: Beginning a Community Hypertextbook Project" in *Proc. 11th Koli Calling International Conference on Computing Education Research*, Koli National Park, Finland, November 17-20, 2011, 112–117.

2. E. Fouh, M. Akbar, and C.A. Shaffer, The Role of Visualization in Computer Science Education, to appear in *Computers in Education*, 2012.

3. C.A. Shaffer, *Data Structures and Algorithm Analysis in Java: Third Edition*, Dover Publications, Mineola, NY, 2011.

4. C.A. Shaffer, M. Akbar, A.J.D. Alon, M. Stewart, and S.H. Edwards, "Getting Algorithm Visualizations into the Classroom" in *Proc. 42nd ACM technical symposium on Computer science education (SIGCSE'11)*, Dallas TX, March 9, 2011, 129–134.

5. C.A. Shaffer, M.L. Cooper, A.J.D. Alon, M. Akbar, M. Stewart, S. Ponce, and S.H. Edwards, Algorithm Visualization: The State of the Field, *ACM Transactions on Computing Education 10*, 3(August 2010), 1–22.

FIVE OTHER SIGNIFICANT PUBLICATIONS:

1. R. Randhawa, C.A. Shaffer, and J.J.Tyson, Model Composition for Macromolecular Regulatory Networks, *IEEE/ACM Transactions on Computational Biology and Bioinformatics 7*, 2(April-June 2010), 278–287.

2. T.-H. Ahn, L.T. Watson, Y. Cao, C.A. Shaffer, and W.T. Baumann, Cell Cycle Modeling for Budding Yeast with Stochastic Simulation Algorithms, *Computer Modeling in Engineering and Sciences 51*, 1(2009), 27–52.

3. P. Saraiya, C.A. Shaffer, D.S. McCrickard, C. North, Effective Features of Algorithm Visualization, *SIGCSE '04: Proc. 35th SIGCSE Technical Symposium on Computer Science Education*, Norfolk VA, March 2004, 382–386.

4. J. Koenemann, J.M. Carroll, C.A. Shaffer, M.B. Rosson, and M.A. Abrams, Designing Collaborative Applications for Classroom Use: The LiNC Project, in *The Design of Children's Technology*, Allison Druin, ed., Morgan Kaufmann, 1998, 99-122.

5. L.W. Carstensen, Jr., C.A. Shaffer, R.W. Morrill and E.A. Fox, **GeoSim**: A GIS-based simulation laboratory for introductory geography, *J. Geography 92*, 5(Sep/Oct 1993), 217–222.

RECENT AWARDS

1. 2010-2014 J.J. Tyson, W.T. Baumann, J. Peccoud, S. Hoops, Y. Cao, and C.A. Shaffer, "Stochastic Models of Cell Cycle Regulation in Eukaryotes," NIH, $1,986,688.
2. 2010-2011 C.A. Shaffer and S.H. Edwards, "The AlgoViz Portal: Lowering the Barriers for Entry into an Online Educational Community" NSF NSDL program, DUE-0937863, $149,999.
3. 2009–2010 C.A. Shaffer and S.H. Edwards, "Building a Community and Establishing Best Practices in Algorithm Visualization through the AlgoViz Wiki," NSF CCLI program, DUE-0836940, $149,206.
4. 2006–2010 J.J. Tyson, W.T. Baumann, Y. Cao, M.R. Paul, A. Sandu, C.A. Shaffer, and L.T. Watson, "Stochastic Models of Cell Cycle Regulation in Eukaryotes," NIH/NIGMS, R01-GM078989-01, $1,437,504.

SELECTED PROFESSIONAL SERVICE

1. Vice General Chair, 2009 Spring Simulation Multiconference, San Diego, CA.
2. Program Chair, 2008 High Performance Computing & Simulation Symposium, Ottawa.
3. 2008-present: Associate editor, *Simulation: Transactions of the Society for Modeling and Simulation International*
4. 2005–present: Member, Editorial Review Board, *AACE Journal of Interactive Learning Research* and *AACE Journal of Computers in Mathematics and Science Teaching*
5. 2005-present: Member, Virginia State University's Computer Science Advisory Board
6. 2010, 2009, 2007, 2005, 2004, 1997, 1994, 1993: Member, NSF program review panels.
7. 2002, 2001, 1999, 1998, 1994: Reviewer, FIPSE Comprehensive Program.

SYNERGISTIC ACTIVITIES

1. Project director for the AlgoViz Portal (`http://algoviz.org`), a gathering place for users and developers of algorithm visualizations and animations (AVs). It is a gateway to AV-related services, collections, and resources. The goal is to increase the use of AVs in the classroom. Funded by NSF CCLI and NSDL programs.
2. **Project GeoSim** (`http://geosim.cs.vt.edu`): A collection of simulations for use in introductory geography courses. Sponsored by NSF and FIPSE. 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. Used by tens of thousands of students around the world.
3. Statistics Activity-Based Learning Environment **SABLE** (`http://simon.cs.vt.edu/SoSci`), tutorials and Java applets for introductory statistics. Supported by FIPSE. These materials have been used for a many classes at Virginia Tech and elsewhere.

COLLABORATORS & OTHER AFFILIATIONS

Coauthors and collaborators outside of Virginia Tech within the past 48 months: Herbert Sauro (U. of Washington), Ed Thomas (USFS), Masha Sosonkina (Ames Lab), Tom Naps (U. of Wisconsin, Oshkosh), Susan Rodger (Duke U.), Ari Korhonen (Aalto U., Finland), Ville Karavirta (Aalto U., Finland), Lauri Malmi (Aalto, U., Finland).

PhD Adviser: Hanan Samet, University of Maryland

PhD graduates: Ranjit Randhawa (Pfizer), Liya Thomas (Concord College), Nicholas Allen (Microsoft), James M.A. Begole (SUN Microsystems)

MS students (past 5 years): Matthew Cooper, A.J. Alon, Umme Juka Mobassera.