Brad B. Topol

Work Address
College of Computing
Georgia Institute of Technology
Atlanta, Georgia 30332
(404)-894-5622
email: topol@cc.gatech.edu
http://www.cc.gatech.edu/gvu/people/Phd/Brad.Topol.html

Home Address
3310 Morgan Place Ct. NE
Atlanta, Georgia 30324
(404)-248-9547

Goals

Seeking a position in which I can apply technical expertise, management knowledge, and leadership skills in an innovative technology and product development environment driven by identified or expected customer needs.

Interests

- Object Oriented Wide Area Distributed Computing Environments.
- Software Infrastructures for Interactive Service to the Home Applications.
- Electronic Commerce.
- Concurrent and Distributed Heterogeneous Network Computing Systems.
- Graphical User Interfaces and Visualization Tools for Network Computing.

Education

Ph.D. in Computer Science.
Georgia Institute of Technology, Spring 1998(expected).
Minor: Management of Technology
GPA:4.0

- Thesis topic: Software infrastructures for the development of scalable, platform independent (100% Java) fault tolerant state sharing applications for service to the home and metacomputing wide area distributed computing environments.
- Co-Advisor: Mustaque Ahamad (mustaq@cc.gatech.edu).
- Co-Advisor: John Stasko (stasko@cc.gatech.edu).
- Committee: Mustaque Ahamad (Georgia Tech, CS), Richard Fujimoto (Georgia Tech, CS), Kishore Ramachandran (Georgia Tech, CS), John Stasko (Georgia Tech, CS), Vaidy Sunderam (Emory University, CS)

M.S. in Computer Science.
Emory University, 1993.

- Thesis topic: Second Generation Heterogeneous Network Computing with Conch.
- Advisor: Vaidy Sunderam (`vss@mathcs.emory.edu`).

B.S. in Computer Science, *summa cum laude.*
Emory University, 1992.

Honors and Activities

Member of Phi Beta Kappa
Member of Gamma Beta Phi
Dean's List every semester
Chairman of the College of Computing Graduate Student Committee, 1995
Program Committee Member for the 1997 Cluster Computing Conference

Professional Experience

Graduate Research Assistant, Georgia Tech Atlanta, Georgia
September, 1993–Present.

Chief architect for the Mocha platform-independent (100% Java) wide area distributed computing environment which provides security, networking, debugging, and fault tolerant state sharing support for home service and metacomputing applications.

Contributor to the design of an optimized implementation of Java RMI that utilizes advanced transport protocols and object caching to enable Java RMI to more efficiently support interactive applications.

Chief architect for the PVaniM-GTW visualization environment. The system provides insight into the execution of network based parallel discrete event simulation middleware. The research investigates the use of middleware-specific visualization support in combination with general purpose visualization techniques to identify environmental and algorithmic factors that degrade simulator performance.

Chief architect of the PVaniM visualization environment for *PVM*. The interactive system provides both on-line and postmortem graphical views of *PVM* network computing applications and provides support for custom application-specific views.

Research Assistant, Emory University Atlanta, Georgia
June, 1994–October, 1994. Developed the PGPVM subsystem for use in the performance tuning of NAS Parallel Benchmarks running on PVM.

Programmer, Custom Programming Service Melbourne, Florida
May, 1993–August, 1993. Responsible for the recoding and implementation of a complete security company time management system from the Foxbase language to the fourth generation Progress language on a Vax VMS system.

Graduate Research Assistant, Emory University Atlanta, Georgia
May, 1992–August, 1992. Participated in the design and development of the Conch second generation heterogeneous network computing system. Responsible for the message passing subsystem and various internal components of the Conch system.

Computer Skills

Fluent in Java, C, C++, X Windows, OSF/Motif, TCP/IP, RPC/RMI, UNIX, HTML. Experience with CORBA, FORTRAN, and M68000 assembler. Platforms include SUN, SGI, Sequent, IBM, DEC.

Publications

Brad Topol, Mustaque Ahamad, and John Stasko. "Robust State Sharing for Wide Area Distributed Applications", College of Computing, Georgia Institute of Technology, Atlanta, GA, Technical Report GIT-CC-97-25, September 1997. To appear in the *Proceedings of the The 18th International Conference on Distributed Computing Systems (ICDCS'98).*

V. Krishnaswamy, D. Walther, S. Bhola, E. Bommaiah, G. Riley, **B. Topol**, and M. Ahamad. "Efficient Implementations of Java Remote Method Invocation (RMI)". To appear in the *Proceedings of the 4th USENIX Conference on Object-Oriented Technologies and Systems (COOTS'98).*

V. Sunderam, **B. Topol**, S. Moyer, A. Krantz. "Tools and Auxiliary Subsystems in PVM", *Recent Advances in Parallel Virtual Machine and Message Passing Interface*, Eds. M. Bubak, J. Dongarra, J. Wasniewski, Springer-Verlag Lecture Notes in Computer Science LNCS 1332, pp. 285-294, November 1997.

Brad Topol, John Stasko and Vaidy Sunderam. "PVaniM: A Tool for Visualization in Network Computing Environments". Accepted for publication in the journal *Concurrency: Practice and Experience.*

C. Carothers, **B. Topol**, R. Fujimoto, J. Stasko, and V. Sunderam. "Visualizing Parallel Simulations in Network Computing Environments: A Case

Study", *Proceedings of the 1997 Winter Simulation Conference (WSC '97)*, Atlanta, GA, December 1997, pages 110-117.

R. Kordale, V. Krishnaswamy, S. Bhola, E. Bommaiah, G. Riley, **B. Topol**, F. Torres-Rojas, and M. Ahamad. "Middleware Support for Scalable Services", *Proceedings of the Fourth International Workshop on Community Networking*, Atlanta, Georgia, September 1997, pages 53-58.

Brad Topol, John Stasko, and Vaidy Sunderam. "The Dual Timestamping Methodology for Visualizing Distributed Applications", *Proceedings of the IASTED International Conference on Parallel and Distributed Systems - Euro-PDS '97*, Barcelona, Spain, June 1997, pages 81-86. Selected for publication in a Special Issue of the *IASTED International Journal of Parallel and Distributed Systems and Networks.*

Chris Carothers, **Brad Topol**, Richard Fujimoto, John Stasko, and Vaidy Sunderam. "Middleware-Specific Visualization Support for Parallel Simulations in Cluster Environments", *Proceedings of the 1997 Cluster Computing Conference.*

Brad Topol, John Stasko, and Vaidy Sunderam. "Integrating Visualization Support Into Distributed Computing Systems", *Proceedings of the 15th International Conference on Distributed Computing Systems*, Vancouver, BC, pp.19-26, May 1995.

D. Bowman, A. Ferrari, B. Schmidt, M. Schmidt, **B. Topol**, and V. Sunderam. "The Conch Network Concurrent Programming System", *Emory University Technical Report*, January 1994.

Brad Topol."Conch: Second Generation Heterogeneous Computing", *Master thesis for the Dept. of Mathematics and Computer Science, Emory University*, May 1993.

Major Software Systems

(Externally distributed research software)

- The Conch Heterogeneous Computing System, (with B. Schmidt, M. Schmidt, V. Sunderam), September 1992.
- ParaGraph Extensions for PVM, (with A. Alund, V. Sunderam), August 1994.
- PVaniM – Visualization Environment for PVM, version 1.0, (with J. Stasko), February 1995.
- PVaniM – Visualization Environment for PVM, version 2.0, (with J. Stasko, V. Sunderam), November 1995.

References Available upon request.