

network by requiring each user to carry all of his authentication credentials. AGE supports a social network overlay as a fall back mechanism to relieve the bottleneck and single failure point of a central authentication server.

- Primary researcher on joint T-Labs and UIUC project.
- Designed unique authentication procedure targeted at open Wi-Fi networks with millions of mobile clients.
- Implemented AGE modules for `FreeRADIUS` and `wpa_supplicant` open source software packages.

DPRG (Distributed Protocols Research Group)
2004-2005

Prof. Indranil Gupta
University of Illinois

Our design methodology for distributed protocols identifies multiple building blocks which compose many probabilistic protocols previously developed. The methodology also specifies the composition rules by which the building blocks are combined into complete protocols. The Proactive Protocol Composition Language is used to specify new protocols from existing C code based on this methodology.

- Researched methodologies for composing and designing distributed protocols.
- Developed the Proactive Protocol Composition Language (PPCL), a toolkit for composing distributed protocols.

Pablo Research Group
2003-2004

Prof. Dan Reed
University of Illinois

The Pablo research group researched areas of high performance computing including performance characterization, high speed I/O, and Grid monitoring.

- Researched temporal performance monitoring in the Grid as part of the GrADS project.

Robert Bosch GmbH FV/FLI (R&D/Systems Laboratory)
Summer 2000

Research Intern
Stuttgart, Germany

- Implemented prototype steer-by-wire system based on CAN protocol. The steer-by-wire system attempts to obsolete the traditional steering column designs with a completely electronic replacement. Challenges include fault tolerance and message priority.

Work Experience

NCSA
2004-2005

Graduate Research Programmer
Urbana, IL

The Distributed Applications Support Team at NCSA was part of the National Laboratory of Advanced Network Research. The group developed tools for monitoring and managing high performance networks.

- Designed and implemented an advanced tool for network monitoring and analysis (the Network Performance Advisor) which allows end-users to diagnose common Internet problems based on gathered metrics.
- Programmed around 8000 lines of Java code.

Sun Microsystems
2001-2003

Member Technical Staff
Santa Clara, CA

- Assessed and validated incoming customer reports regarding inconsistencies in the Java Development Kit including core Java, Java Web Start, JSSE, the Java compiler and JFC.

- Assisted in designing and implementing internal tools in JSP, Java, Perl, sh, sql, sed and awk.

Publications

1. Nathanael Thompson, Petros Zerfos, Robert Sombrutzki, Jens-Peter Redlich and Haiyun Luo. "100% Organic: Design and Implementation of Self-Sustaining Cellular Networks", *Proceedings ACM HotMobile*, Napa Valley, USA, February, 2008
2. Nathanael Thompson, Haiyun Luo, Petros Zerfos, Jatinder Singh, Zuoning Yin. "Extended Abstract: Authentication on the Edge - Distributed Authentication for a Global Open Wi-Fi Network", *Proceedings ACM MobiCom*, Montréal, Canada, September, 2007
3. Ercan Ucan, Nathanael Thompson, Indranil Gupta. "A PiggyBacking Approach to Reduce Overhead in Sensor Network Gossip", *Proceedings ACM MIDSSENS*, Newport Beach, USA, November, 2007
4. Nathanael Thompson, Guanghui He, Haiyun Luo. "Flow Scheduling for End-host Multihoming," *Proceedings IEEE INFOCOM*, Barcelona, Spain, April, 2006
5. Indranil Gupta, Steve Ko, Nathanael Thompson, Mehwish Nagda, Christo F. Devaraj, Ramss Morales, Jay A. Patel. "A Case for Methodology Research in Self-* Distributed Systems," LNCS 3460, *Self-Star Properties in Complex Information Systems (eds: O. Babaoglu et al)*, pages 260-272, 2005

Technical Reports

1. Nathanael Thompson, Haiyun Luo, "PERM: A Collaborative System for Residential Internet Access," *Technical Report UIUCDCS-R-2006-2751*, University of Illinois, July, 2006
2. Nathanael Thompson, Indranil Gupta, Kenneth Birman. "A Composition Methodology for Designing Proactive Distributed Protocols," *Technical Report UIUCDCS-R-2004-2490*, University of Illinois, October, 2004

Posters

1. Guanghui He, Nathanael Thompson, Haiyun Luo. "Individual User WLAN Traffic Analysis," *Poster, ACM MobiHoc*, Champaign, Illinois, May, 2005

Awards

2006: Recipient of the Deutsche Telekom PAM (PhD - Advisor - Mentor) fellowship.

Teaching Experience

Graduate Teaching Assistant - CS241: System Programming University of Illinois
Fall 2006

CS241 is an undergraduate level course teaching introductory systems programming and Operating Systems concepts.

- Led two weekly discussion sections of 20 students.
- Designed and graded student programming assignments.
- Wrote student homeworks and co-wrote exams.

Graduate Teaching Assistant - CS438: Computer Networks University of Illinois
Spring 2006

CS438 is a mixed senior / graduate level class teaching introductory concepts in networking. Students also complete advanced systems programming assignments.

- Developed homeworks and programming assignments.
- Delivered several lectures and held office hours.

Technical Skills Operating Platform(s): Linux, Mac OS X, Solaris 2.6-2.8
Programming Languages: C, Java, perl, sed, awk, sh, C++
Web Technologies: JSP, JavaScript, HTML, CGI, SQL
Other Technologies: subversion (CVS), vi, LaTeX, gdb

References References available upon request.