

Objective

To design and develop software in a technically strong and result oriented group so as to maximize the utilization of my knowledge, skills and experience.

Profile

- Designing and developing Messenger Servers for Yahoo! Inc.
- Researched on Algorithm Design and Analysis, Machine Learning techniques, Sociological networks and their applications to Mobile Wireless Networks (Routing, Location Prediction)
- 6+ yrs of Industry experience in large scale software development in C/C++ on Unix/Linux/FreeBSD
- Excellent communication skills, self-motivated and well-organized with attention to details

Education

- Ph.D., Computer Science & Engineering, University at Buffalo, Buffalo, NY, Sept. '06 (GPA: 3.98/4)
- M.S., Computer Science & Engineering, University at Buffalo, Buffalo, NY, June '03 (GPA: 3.97/4)
- B.E., Computer Science & Engineering, Jadavpur University, Calcutta, India, June '99 (GPA: 3.85/4)

Experience

- **Technical Yahoo! (Messenger Server) – Yahoo! Inc., Sunnyvale, CA (Sept. 2006 – Present)**
 - As a software engineer in the Yahoo! Messenger Server team my primary responsibilities include designing, developing and maintaining messenger servers, specially the Connection Server (CS).
 - Projects completed so far include: *Reliable Message Transmission between Client & CS; CS support for Server Side Message Archiving; Multi-Colo Client Connection Racing; Multi-Process Edge Servers; Server Side Preferences; CS support for Multiple Points of Client Presence (MPOP).*
- **Research Assistant (PhD Candidate) – LANDER (Laboratory for Advanced Network Design, Evaluation and Research) Dept. of C.S.E., University at Buffalo, NY (3 years)**
 - Primary research areas include profiling of wireless users' mobility using machine learning techniques based on social influences on wireless networks and its applications to routing and location management strategies. This method is capable of profiling other non-networking phenomenon such as web search/surf patterns to provide more customized search results. Collaborating with other networking groups in UB focusing on design of cellular systems, incentive management in wireless networks, and system level security designs.
- **Graduate Intern – Nokia Research Center (NRC), Burlington, MA (3 months)**
 - **Summer 2005 – Cellular Networking Research group**
 - Design and development of a performance engineering tool for 2.5G (GPRS) Cellular networks
 - Modeled modules for MS, BSS, SGSN, HLR, GGSN and the associated protocols in OPNET v9.0
 - Implemented Nokia's propriety weighted queuing algorithms inside the tool's BSC and SGSN modules
 - Capable of measuring delay and throughput of various application scenarios (POC, FTP, VOIP, etc)
- **Graduate Intern – Fujitsu Labs of America (FLA), Sunnyvale, CA (4 months)**
 - **Spring 2005 – IP Networking Research group**
 - Designed and implemented an Integrated Control Plane for an Automatically Switched Optical Network as per UNI 2.0 OIF specification for SUPERCOMM 2005 Demo (Interoperability testing among vendors)
 - Developed over and debugged a 3rd party simulator and integrated with Flashwave 4500 SONET boxes
 - Performed regional testing with various optical vendors at the **SI&T Lab in Verizon Wireless, MA**
- **Graduate Intern – Cadence Design Systems, Chelmsford, MA (6 months)**
 - **Summer 2003 – Functional Verification (Incisive/NC) team**
 - Design and implementation of the co-existence of Analog Mixed Signal (AMS) and System C, and AMS with Assertion Based Verification (ABV), with no support for intercommunication
 - Support for co-compilation of mixed modules with the "-analog" compile flag with modified checks
 - Integration of Analog Mixed Signal (AMS) components with top level System C driver modules
 - **Summer 2002 – Functional Verification (Incisive/NC) team**
 - Assertion Based Verification (SUGAR 2.0 FL) : Responsible for adding the support for parsing of SUGAR 2.0 constructs in NCVHDL and performing unit testing and documentation
 - Remote C Debugging: Design and implementation of a Debug Server for NCSIM. This Server was capable of invoking DDD as a C debugger remotely and then allowed NCSIM to debug itself
- **Teaching Assistant – Dept. of Computer Science & Engineering, SUNY at Buffalo**
 - Fall 2004, Spring 2004, Fall 2003 : Software Engineering Concepts (CSE 442/542)
 - Spring 2003, Fall 2002, Spring 2002, Fall 2001 : Digital Systems (CSE 241)

- **Member of Technical Staff – Cadence Design Systems (I) Pvt. Ltd. Noida, India (2 years)**
 - **Interleaved Native Compiled Architecture (INCA) R&D Group (June '99 – June '01)**
 - Design & implementation of features in NCVHDL, NCELAB, and NCSIM; Documentation for design & functional specification, and test plans; Resolving bugs; Unit & regression testing
 - **Features – LDV 3.3 Release Stream**
 - Binding Indication & Direct Instantiation Support for Mixed Language Designs (Verilog under VHDL)
 - Vector Delay Support for Negative Constraint Checks in VITAL SDF Back Annotation
 - **Projects – LDV 3.0 & 3.1 Release Streams**
 - Implementation of "-INITZERO" runtime option in NCVHDL (initialize INTEGER & TIME to zero)
 - Implementation of "-RELAX" runtime option in NCVHDL & NCELAB (relaxed LRM interpretations)

Selected Publications (First Author Only)

Journals

- **Joy Ghosh**, Sumesh J. Philip, Chunming Qiao, "*Sociological Orbit aware Location Approximation and Routing (SOLAR) in MANET*" - ELSEVIER Ad Hoc Networks Journal, Vol. 5, Issue 2, Pgs 189-209, **Nov 2005**

Workshops

- **Joy Ghosh**, Hung Q. Ngo, Chunming Qiao, "*Mobility Profile based Routing within Intermittently Connected Mobile Ad hoc Networks (ICMAN)*" – Proceedings of IWCMC 2006 Delay Tolerant Mobile Networks workshop, **July 2006**, Vancouver, Canada
- **Joy Ghosh**, Matthew J. Beal, Hung Q. Ngo, Chunming Qiao, "*On Profiling Mobility and Predicting Locations of Wireless Users*" – Proceedings of ACM/SIGMOBILE REALMAN 2006 workshop at ACM Mobihoc '06, **May 2006**, Florence, Italy

Conferences

- **Joy Ghosh**, Hung Q. Ngo, Seokhoon Yoon, Chunming Qiao, "*On a Routing Problem within Probabilistic Graphs*" - Accepted for publication in IEEE Infocom '07, **May 2007**, Anchorage, AK
- **Joy Ghosh**, Cedric Westphal, Hung Ngo, Chunming Qiao, "*Bridging Intermittently Connected Mobile Ad hoc Networks (ICMAN) with Sociological Orbits*" - Poster at INFOCOM '06, **April 2006**, Barcelona, Spain
- **Joy Ghosh**, Sumesh Philip, Chunming Qiao, "*Sociological Orbit aware Location Approximation and Routing in MANET*" – Proceedings of IEEE Broadnets, **October, 2005**, Boston, MA
- **Joy Ghosh**, Sumesh Philip, Chunming Qiao, "*Poster Abstract: Sociological Orbit aware Location Approximation and Routing (SOLAR) in MANET*" – Presented as a Poster in ACM Mobihoc '05, **May 2005**, Champaign, IL
- **Joy Ghosh**, Sumesh Philip, Chunming Qiao, "*Acquaintance Based Soft Location Management (ABSLM) in MANET*" – Proceedings of IEEE Wireless Communications and Networking Conference, **Mar 2004**, Atlanta, GA

Skills & Achievements

- Technical
 - Network Simulators: GloMoSim, OPNET, NS-2
 - Computer Languages : C, C++(OOP), Assembly, Perl, Tcl/Tk, PHP, Shell Scripts, Socket Programming, VHDL/Verilog, MySQL
 - Operating Systems: Windows (9x/NT/XP), SUN Solaris, HP-UX, Red Hat Linux, FreeBSD
 - Tools & Software: MATLAB, MAPLE, Clearcase, CVS, DDD, Source Navigator, IIS (webserver)
- Organizational
 - Official reviewer of IEEE Wireless Communications and Networking Conference 2005 & 2006
 - Chair of 17th and 19th Annual Graduate Conference in Dept. of C.S.E. in University at Buffalo
 - Member of Employees Activity Committee in Cadence Design Systems (I) Pvt. Ltd. ('00 – '01)

Graduate Projects:

- FreeBSD 5.2 Kernel level Access Control List (CSE 512 – Operating Systems Internals: Spring '04)
*Implemented an access control list at the **system level** for files in a specific file system*
- FreeBSD 5.2 Kernel level MP Safe Locking Mechanism (CSE 512 – Operating Systems Internals: Spring '04)
*Implemented a shared locking mechanism for groups of processes (across multiple processors) at the **system level***
- UB Talker : A Speech Augmentation Device (CSE 542 – Software Engineering Concepts : Spring '03)
Implemented (C++) a speech augmentation software tool for physically handicapped children in CHC, Buffalo, NY
- User Authentication and Secure Communication (CSE 565 – Computer Security : Spring '02)
Implemented (Tcl/Tk) a Chat Server which supports User Authentication and Secure Communication using Session keys
- Impact of a Key Distribution Center (KDC) on network performance (CSE 565 – Computer Security : Spring '02)
*Analyzed the effect of using a KDC for secure key distribution on the network data throughput and control overhead through simulations in **OPNET**.*
- Peer to Peer File Sharing Application (CSE 530 – Computer Communication : Spring '02)
Implemented (C/Socket) a Peer to Peer File Sharing Application for users across different networks
- Unix Disk file System (CSE 521 – Operating Systems : Fall '01)
Implemented a complete Disk File system (C on UNIX) with user level interfaces