Chaitanya Garikiparthi

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Qualifications Summary:	- Strong background in probability analysis, data structures, analysis and design of algorithms. - About 1 year of software testing experience on multiple platforms. - Extensive knowledge in network protocols, performance analysis and modeling using matrix analytical methods, simulation methodologies. - Strong research and implementation experience with regards to software development using MAPLE and C++/C programming. - Motivated, Strong Analytical and Quantitative abilities.

Education

Ph.D. in Computer Science and Telecommunications Dec'07 (Expected)
School of Computing and Engineering.
University of Missouri, Kansas City.
Area: Performance Analysis and Network Modeling using Linear Algebraic Queueing Theory

Master of Science in Computer Science Graduated in Dec'01
University of Texas at Dallas, Richardson, TX.
Emphasis: Computer Networking

Bachelor of Engineering in Mechanical Engineering Graduated in May'99
Chaitanya Bharathi Institute of Technology (CBIT), Osmania Univ., AP, India.

Publications

C. Garikiparthi, A. Van de Liefvoort, K. Mitchell, "Sample Path Analysis of Busy Periods and Related First Passages of a Correlated *MEP/MEP/1* System", (to appear in) *4th International Conference on the Quantitative Evaluation of Systems (QEST) 2007*, Edinburgh, Scotland.

C. Garikiparthi, V. Kumar, S. Chakravarthy, "A multi-Level Scheme for Web Security", *Proceedings of High Performance Computing Asia, 2002*.

Papers in Writing

C. Garikiparthi, A. Van de Liefvoort, K. Mitchell, "On The Effect of Correlations and Starting Levels on First Passage Times and Number of Customers Served during certain First Passages in a *MEP/MEP/1* system".

C. Garikiparthi, A. Van de Liefvoort, K. Mitchell, "Busy Period Analysis of Finite Queues with Auto-Correlated Arrival and Service Processes".

Research and Work Experience

Instructor, CS191: Discrete Mathematics I Aug'06 – Present
School of Computing and Engineering, UMKC Aug'04 – Dec '04
- Full responsibility to deliver Discrete Structures and Mathematics-I.
- Syllabus: Logic and Proof, Analysis of Algorithms, Recursive Algorithms, Basic Counting methods and Probability.

Software Testing Engineer May'06 – Aug'06
Motorola Inc., Overland Park, KS.
Performed software testing on CDMA 1x and EVDO capable Motorola handsets for IP-Over-The-Air and Firmware-Over-The-Air functionality at Sprint STIC Lab. Also involved in test case design and development.

Instructor, CS291: Discrete Mathematics II Aug'05 – May '06
School of Computing and Engineering, UMKC
- Syllabus: Recurrence Relations, Graphs, Trees (Minimal Spanning Trees, Tree Traversals etc), Network Models (Maximal Flow algorithms), Automata theory.

Teaching Assistant, Various Courses Aug'02 – Dec '06
School of Computing and Engineering, UMKC
- Served as a Teaching assistant to various courses including Data Structures and Algorithms (CS 352), Probability And Stochastic Processes (CS 394).

Research Assistant   Jan'04 – Present
School of Computing and Engineering, UMKC   **Funded by NSF**
Transient Analysis of MEP/MEP/1 Queues.
In this work we studied the Busy Period of a transient MEP/MEP/1 Queue where both the arrivals and service processes are allowed to be auto-correlated. Using linear algebraic queueing theory as our main analytical tool we studied the probabilities for serving 'n' customers in a busy period and the distributions for the busy period lengths. We also studied certain related first passages for higher level transitions, both for the finite and the infinte queueing situations.

Research Assistant   May'03 –Dec '03
School of Computing and Engineering, UMKC   **Funded by NSF**
Modeling and Performance Analysis of Sprint 3G Data-access module.
We studied data access patterns arriving at multiple Sprint 3G data-warehouse sources connected via various middleware solutions. Performance models of the system were developed to study CPU utilizations to analyze certain anomalous behavior observed in pre-production environment.

Web Programmer   Jan'02 – Dec '02
School of Computing and Engineering, UMKC
Developed dynamic web pages with capabilities to conduct and grade exams on the fly as a part of a broad system migration that I did when changing the departments "Computer Survival and Applications" course from an old server onto an Apache server. Re-designed some older code base for efficiency with respect to database operations.
Platform: Java, Servlets, JSP, MS Access.

Teaching Assistant   May'01 – Dec'01
CS Department, Univ. of Texas at Dallas.
- Responsibilities include conducting help sessions, assisting the instructors with grading of exams and projects
- Course: Unix Shell Programming.

Systems Engineer, Co-Op, 3G Wireless division   Jan'01 -May'01
Nortel Networks, Richardson, TX.
Maintained automation scripts to inject data into a BSSM (Nortel's Adhoc system) to stress test the real-time system performance of the 3G Wireless network.
Platform: PERL, C++, Unix.

Skills		
	Programming/Scripting Languages	C, C++, Java, Perl, Tcl/Tk
	Protocols	HTTP, TCP/IP, UDP, OSPF, RIP, BGP, ATM, MPLS
	Operating Systems	Unix, Windows
	Databases	MS Access, Oracle
	Mathematical Packages	Maple, Matlab, CPLEX
	Simulation Package	CSIM, OPNET, TELPACK
	Technologies	CDMA, SONET, GPRS
	Other Software Skills	Java Script, PL/SQL, Auto CAD, ANSYS, Developer 2000.

Educational Projects

- **Network File System (NFS).** Designed and implemented a Unix Network File System with features like file sharing, file synchronization, disk backup and Security.
- **Distributed System.** Implemented a distributed dynamic data structure with central server, bucket servers and clients. Features like load sharing (using migration policies), load balancing, concurrency control, performance optimization were implemented.
- **Simulation and Analysis of Network Queueing systems with Markovian and Pareto events.**
- **Data Link Layer Protocols.** Implemented a project involving simulation of various data link layer protocols and validation of the experimental data with real data collected for various traffic parameters.
- **Multi-process Scheduling.** Implemented a multi-process scheduling system. Inter-process communication is handled with Pipes and synchronization is achieved with Semaphores. Signaling at multiple levels is done and the behavior of traffic is simulated.

- **Routing in Telecommunications Networks and Graph drawing.** This project deals with maintaining a dynamic environment of phone numbers using various kinds of Data Structures, authorizing calls, finding the shortest paths using Dijkstra's Shortest Path Algorithm and maintaining the connectivity of the Graph all the time when new nodes are added and/or deleted.
- **A word recognition system using advanced Data Structures**
- **3G Wireless Networks.** Presented a paper on the current trend of 3G Wireless Systems, the technologies behind it, and the challenges faced.
- **Personal Communication System**. Created a personal telephony system using Voice-Over-IP enabling users to dial other users logged into the system. The whole system is implemented in Java.

Memberships and Awards

- Received **Dean's Doctoral Fellowship** for the year 2002-2003 by SGS, UMKC.
- Received Merit Certificate in Mathematical Olympiad conducted by APAMT (India).
- Received Merit Certificate in State level Science Fair for two consecutive years.
- Executive member of the interdisciplinary doctoral student council (IDSC).