

OBJECTIVE

A POSITION AS A SOFTWARE DEVELOPER THAT COMBINES SYSTEMS AND APPLICATIONS ARCHITECTURE, NETWORK AND SYSTEMS ENGINEERING AND PROGRAMMING AND DESIGN THAT EXPLOITS MY CREATIVE THINKING AND ANALYTICAL ZEAL.

KEYWORDS

Computers, software, mobile computing, peer-to-peer, networking, embedded systems, wireless, database development. Java, Perl, C++, C, Unix, Linux.

EXPERIENCE

1/2001 - PRESENT

DATAMAN LAB, RUTGERS

NEW JERSEY

RESEARCH ASSISTANT

I work as a research assistant with Prof. Badri Nath in the Dataman Lab in Rutgers (<http://www.cs.rutgers.edu/dataman>). Our focus is in wireless sensor networks, mobile computing and peer-to-peer systems.

Some interesting project I have worked on:

- » Trajectory Based Forwarding (TBF) is a new routing protocol for sensor networks. I implemented the protocol on Motes running TinyOS. Each packet contains an encoded trajectory that guides the packet through the sensor field. In the current implementation, packets can follow continuous mathematical curves. The website is at <http://athos.rutgers.edu/dataman/FourierNet/tbf.html>.
- » Ad hoc Positioning System (APS) is a new algorithm to enable Motes to know about their geographic location without using GPS. I implemented the protocol on the Motes, and also designed and implemented a querying protocol, which enables me to query and update the protocol state on the Mote. Developed a TCL/TK GUI that maps and queries the given sensor field in 2D. The website is at <http://athos.rutgers.edu/dataman/FourierNet/aps.html>.
- » Slip Simulator: Framework for emulating the IP protocol over TCP/IP sockets using data forwarding between a socket and TTY-pair. One side of the TTY pair is attached to the SLIP protocol.
- » Implemented a gateway between sensor networks and the Internet. The PC platform was Linux and on the sensor network, I used TinyOS running on Rene motes (Atmel AVR processors).

Class Projects:

- » Databases: Implemented an efficient 2D range query algorithm based on colored range searching.
- » Computer Networks: Designed and implemented a peer-to-peer web server in C++, using the Chord API. The goal was to enable mobile users to seamlessly query and download information in mobile networks based on location.
- » Communications Network: Simulated protocols like BGP, Multicasting using a Java framework.
- » OS Project: User Level Threads library on Solaris, Replicated File System and cache-affine, multiple run queue Linux scheduler.
- » Software Engineering Project: Real-time duplex voice communications using JMF.

2/2001 - 12/2001

MINDTREE CONSULTING

BANGALORE, INDIA

SOFTWARE ENGINEER

I joined Mindtree as soon as I finished my bachelors. My responsibilities included designing and implementing several medium-sized software modules. These were developed in various languages, including Java, C, C++ and PERL.

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- » MP3 crawler in Java to crawl the office network! This is a multithreaded CIFS/SMB crawler that crawls all computers in the domain. A PERL script will then generate dynamic HTML using the stored data and the user's query. Website: http://www.cs/~ashwink/free_software/mp3Spider/index.html.
- » Developed reentrant libraries in C, C++ and Java. The library provides a set of APIs to a IMAP-like protocol, used for the administration of a message server.
- » Designed and implemented a NNTP-IMAP gateway. A new storage method was provided to the INN news server, which enables storing news messages in a given IMAP folder.
- » Was part of a team that designed USB drivers for UHCI controllers, the platform was VxWorks.
- » Asynchronous mail notification using PERL, LDAP and UDP.

EDUCATION

12/2002 RUTGERS, THE STATE UNIVERSITY NEW JERSEY

MASTER'S DEGREE

- » Pursuing my Masters in Computer Science
- » Current GPA is 3.5
- » I Expect to graduate by December 2002

9/2000 BMS COLLEGE OF ENGINEERING BANGALORE, INDIA

BACHELOR'S DEGREE

- » Secured a degree in Electronics and Communication.
- » Distinction in my final semester and a first class overall.

SKILLS

Deep knowledge and experience with Systems, Internet technologies, software development, public speaking, and technical writing.

Skill Name	Skill Level	Last used	Experience
Java	Expert	Currently used	2 years
C++	Intermediate	1 year ago	1 year
C	Expert	Currently used	3 years
PERL	Expert	1 year ago	1 year
Linux	Expert	Currently used	3 years
Embedded Systems (Atmel AVR)	Intermediate	Currently used	1 year