

Niraj Agarwal
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OBJECTIVE: To obtain a challenging software position in the field of wireless communication.

EDUCATION

- University of Texas at Dallas, **Aug 2004 - Current**
MS in Computer Science - Research Track. GPA: 3.71
- National Institute of Technology, Silchar, India. **Aug 1996 - Jul 2000**
Bachelor of Engineering in Computer Science & Engineering, **GPA: 3.9**

PUBLICATIONS and MASTER THESIS

“Ad hoc 802.11b Cooperative Protocols: Performance in a Slow Fading Channel”
submitted at conference “IEEE GlobeCom’06 WirelessComm”.

Currently working on analytical model of “Ad hoc 802.11b Cooperative Protocol” as part of master thesis.

SOFTWARE SKILLS

Cellular Technology	GSM, GPRS, UMTS (WCDMA)
Languages	C, C++, Java, SQL, Assembly Language (8085)
Networking	UNIX Socket programming, TCP/IP
Operating Systems	WINDOWS and Linux
Scripting Language	TTCN, Perl
Software Applications	MS Office Word, Visio, PowerPoint, Excel, Adobe Acrobat
Tools	Rational ClearCase, ClearQuest, Purify
Customer Facility visited	U.S.A, Germany, South Korea, and Belgium.

PROFESSIONAL EXPERIENCE (4 years)

PrairieComm Tech. (I) Pvt. Ltd., Bangalore, India

Dec 2001 - Jul 2004

Development of Non Access Stratum module of the protocol stack

Re-architected the **Call Control layer** of the dual-mode protocol stack, to handle multiple user application requests.

Testing the functionality of GSM/GPRS protocol stack

Earned appreciation for **3GPP** compliant inter-op testing at Lucent, Germany and Option, Belgium. Project involved **Agilent 8960**, Rohde & Schwarz **CMU-200**, and **CRTU-G**.

Configuration Management for Product Certification group

Initiated a new process to maintain the **TTCN** scripts, developed by the **UMTS** product certification group, in the source control using **Rational ClearCase** tool.

Development of TTCN script for various UMTS scenarios

Created test suite for the **GMM** and **SM** layer, and adapted them to tunable **RRC**, **RLC** and **MAC** layers. Executed multi cell scenarios against **Anritsu 8480A** NS in South Korea

Ind-Telesoft Pvt Ltd., Bangalore, India

Sep 2000 - Dec 2001

Testing the SIP Adapter of the Call Agent in the SoftSwitch

Tested Session Initiation Protocol (SIP) adapter and its inter-working with MGCP and ISUP in the Call Agent of the SoftSwitch.

Re-architecture of SoftSwitch based on Intelligent Networks (CS2)

Built the framework of the Service Controller (ITU-T q1224) required to implement different wireless and wireline features as defined by ITU-T & BellCore standards.

RELEVANT GRADUATE COURSES, PROJECTS, and PAPERS

Design and Analysis of Computer Algorithms	Advance Operating Systems
Algorithmic Aspect of Telecommunication Net.	Advance Computer Networks
Mobile Communication Systems	Software Architecture and Design
Dependable Distributed Systems	Advance Software Engineering

Advanced Operating Systems

- **Chandy-Lamport's Consistent Global Snapshot Algorithm**
Implemented modified Chandy-Lamport's algorithm to capture the consistent global snapshot and identify termination detection in distributed environments.
- **Juang-Venkatesan's asynchronous Checkpointing and Recovery Algorithm**
Implemented the algorithm and enhanced with automated mechanism to verify correctness.

Mobile Communication Systems

Survey of the existing protocols for **Infrastructure Assisted Collision Warning** System. A new protocol was proposed and analyzed.

Dependable Distributed Systems

Survey of **Consensus** and **Reliable Broadcast** in crash recovery asynchronous distributed system. A new protocol was proposed for **Fault Tolerant Mutual Exclusion** Algorithm

Advance Software Engineering

Implemented JFreeChart Assistant Tool using **J2EE** with Servlets as the front-end and EJBs contain business logic. Semester long team project where all the phases of software life cycle Requirements, Analysis, Detailed-Design, Implementation, testing, etc. were followed.

Software Architecture and Design

- Implemented famous KWIC indexing system using Java Applets
- Extended the KWIC architecture to implement a search system Info-Miner based on the KWIC indices.
- Implemented the above project using Implicit Invocation in Java.

TRAINING

- Communication & Team management training at PrairieComm Technologies.
- Java training at Sun Certified center RCS Education Pvt. Ltd., Bangalore.