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Muhammad Raza ur Rehman

Objective

To have a research-oriented job in a dynamic, research oriented company that can satisfy my thirst of research, creativity and innovation.

Education

National University of Sciences and Technology (NUST), Pakistan 2000 – 2004

Bachelor of Engineering in Computer Software Engineering

Cumulative GPA: 3.76 /4.00

F. G. Sir Syed College The Mall Rwp. Cantt. Pakistan 1998-2000

Higher Secondary School Certificate (HSSC) - Federal Board of Education, Pakistan

Division: A1 (First Division) Marks: 85.45% (940/1100)

Academic Distinctions

2000-2004

- **Twice in the list of honor of the Commandant of the College of Signals, NUST (Awarded on extra ordinary academic performance in each semester).**
- **Best Student, Research and Development 2004, College of Signals, NUST**
- **Nominated for the Rector Gold Medal 2004**

1998-2000

- **First Position HSSC Pre Engineering Federal Board of Education Pakistan.**
- **Best Student Pre Eng. F.G. Sir Syed College.**

Professional Experience

Center for Advanced Research in Engineering

Design Engineer

Mentor Graphics

Design Engineer in Embedded Systems subdivision, Involved in the implementation of IKE protocols for the PLUS RTOS.

Pakistan Telecommunication Company Limited (PTCL)

Research Associate in the Department of Network Surveillance and Security

Actively involved in the planning, design, development and implementation of a system for detecting Attacks on PTCL networks.

NUST Institute of Information Technology (NIIT)

Intern in the CERN Lab

- Worked on exposing the functionality of the legacy applications as web services.
- Active research on tools to develop web services in C++ and C.

Awards and Honors

- Participant of Second Round of **IEEE CSIDC 2004.**
- **Winner of South Asia Star Award.**
- **Winner of Chief of Army Staff Gold Medal.**
- Winner of **ACM Bahria Bits Bytes and Colors, Software Competition 2004.**
- Participant of **IBM Eclipse Challenge 2004.**
- Recipient of **Special Appreciation Certificate** from **School of Mathematical Sciences** Lahore on presenting a talk on **Kolmogorov Smirnov Test.**

Publications

- **Dr M. Akbar, Dr Saeed, Raza, Shoaib, Bilal, Qasim “ Adaptive Load Balancing for SNORT” IEEE INCC 2004.**
- **Dr M. Akbar, Dr Saeed, Raza, Shoaib, Bilal, Qasim “Detecting Denial of Service Attacks on High Speed Networks using Kolmogorov Smirnov Test and its Variants”, World Conference on 21st Century Mathematics.**
- **Raza, Web Services Demystified, Dawn Science and Technology Dot Com.**

Technical Presentations

- **NUST B.E project "SNIPER"**, Muhammad Raza ur Rehman, Bilal Anwer, Qasim Javed, Shoaib Alam.
- **World Conference on 21st Century Mathematics 2004, "Detecting Denial of Service Attacks on High Speed Networks using Kolmogorov Smirnov Test and its Variants"**, Qasim Javed, M. Bilal Anwer, M. Raza ur Rehman, M. Shoaib Alam.
- **"Denial of Service Attacks: Causes, Types, Motives and Remedies"**, **Accepted for Pakcon 2004(pps)**, Muhammad Raza ur Rehman.
- **IEEE INCC 2004, "Adaptive Load Balancing Architecture for SNORT"**, M. Shoaib Alam, Qasim Javed, M. Raza ur Rehman, M. Bilal Anwer.

Certifications

- Brain Bench certification on **C Programming**.
- Brain Bench certification on **C++ Programming**.
- Brain Bench certification on **Software Testing**.
- Brain Bench certification on **Networking Concepts**.

Summarized Technical Skills

Language Skills: C, C++, Java, x86 compliant Assembly Language, Lisp, HTML, Linux Kernel Module Programming, XML, PROLOG, VERILOG.

Development Methodologies: UML, Object Oriented Analysis and Design Techniques, Rational Unified Process.

Tool & Server Software: MS Visual Studio 6, MS Visio, Rational Rose, KDevelop, Qt Designer, Borland JBuilder, MATLAB, Borland C/C++ Builder v5.02, Windows Server 2003, MS Access, IBM eclipse, Macromedia Dream Weaver, Valgrind, gdb etc.

Undergraduate Projects

- **SNIPER (Final Year Project)** SNIPER is a Scalable Network Intrusion Detection and Prevention system for Enterprise networks designed specifically to detect and prevent intrusions in a network. A complete Distributed, Hierarchical, Fault Tolerant architecture was conceived, designed and implemented. SNIPER has the capability of both Anomaly and Misuse Detection at Gigabit speeds for an organization, as well as detecting Denial of Service attacks. Further it is flexible and extensible to be valid for any sort of enterprise and capable of analyzing any sort of traffic at whatever speed. Further SNIPER is not limited to network security but it also includes the ways to prevent individual nodes against Intrusions.
- **Comparison of Web Services Implementation in Java and .Net.**
- **Design and Implementation of serial communication in C.**
- **Simulation of an 8-bit Multiplier in C++, Control Unit simulation in C++**
- **Floating Point Unit simulation in C++ (IEEE 754 format).**
- **Implementation of Traveling Salesman Algorithm in C++.**
- **Simulation of Dining Philosopher's Problem.**
- **Implementation of Inter-process communication using Pipes, Shared Memory, FIFO and Sockets on Linux.**
- **C++ Implementation of decision trees (ID3).**
- **Implementation of JIntellifier, a Java based Artificial Intelligence Wizard.**
- **Image recognition using MATLAB and Neural Networks.**
- **Data Clustering using MATLAB and Neural Networks.**
- **Chat Application in Java.**

And many more.