

TAHIR AZIM

Gates Building, Room 284, Stanford University, Stanford 94305, CA.

Email: tazim AT cs DOT stanford DOT edu

EDUCATION:

Sep 2008 - present **PhD Student in Computer Science,**
Stanford University, Stanford, CA.

Member of the Stanford Information Networks Group led by Prof. Philip Levis, working on networked systems for virtual worlds and sensor network dissemination protocols.

Sep 2005- Jun 2007 **Master of Science in Computer Science,**
Stanford University, Stanford, CA.

Relevant Courses Taken: CS140 (Operating Systems), CS240 (Advanced Operating Systems), CS242 (Programming Languages), CS244A (Computer Networks), CS244B (Distributed Systems), CS245 (Database Systems), CS344A (Sensor Network Systems), CS161 (Design and Analysis of Algorithms), CS347 (Transaction Processing & Distributed Databases).

Jan 2001- Jun 2004 **Bachelor of Engineering in Software Engineering,**
National University of Sciences and Technology (NUST), Pakistan.

EXPERIENCE:

Sep 2007- Sep 2008 **Lecturer** at the NUST School of Electrical Engineering and Computer Science (formerly NUST Institute of Information Technology), Pakistan. I supervised undergraduate student research in distributed computing and sensor networks, taught courses in Algorithms and Computer Networks and contributed to curriculum development.

Jul 2007- Feb 2008 **Software Consultant** for TrippertLabs Inc. I was involved in designing and developing Web 2.0 and Facebook applications, as well as writing a semantic classification system for blogs.

Jun 2007- Sep 2007 **Product Development Intern** at Oracle Corporation, Redwood Shores, CA. Developed and implemented the database access layer in a workload management system for Oracle RAC databases.

Jan 2006- Mar 2006 **Research Assistant** at the Computational Learning Lab (CLL), Center for Study of Language and Information, Stanford University. Mainly responsible for surveying and evaluating various atmospheric ecosystem models that could be used with CLL's 'Prometheus' software for predicting future atmospheric CO2 levels.

Feb 2005- Jul 2005 **Visiting Software Engineer** for the Grid Analysis Environment Project at the Lauritsen Lab, California Institute of Technology, Pasadena, CA.

- Added new peer to peer web service discovery features, job execution services, and logging services in the JClarens Web services Framework (<http://clarens.sourceforge.net/jclarens>)
- Refactored existing clients for Clarens/JClarens to make them portable on Mozilla, Internet Explorer and Safari browsers
- Prepared a proposal for continuing collaboration between NUST and Caltech funded by the Ministry of Science and Technology, Pakistan and US State Department

Jul 2004- Sep 2004 **Visiting software developer** for the CMS experiment at the European Organization for Nuclear Research (CERN), Geneva, Switzerland, on contract with the California Institute of Technology.

- Added support for the SOAP protocol in the JClarens Web services framework and created automated Windows installers for JClarens
- Enhanced performance of JClarens by at least an order of magnitude
- Gathered requirements and created a prototype for a system that leverages existing Grid

software (including Globus RLS, LCG POOL and Clarens) to provide transparent Web-service based access to data stored in heterogeneous relational database systems

Jan 2003-
Sep 2005

Research Assistant in the NIIT Distributed & Grid Computing Group, NUST Institute of Information Technology, Pakistan.

- As my bachelors degree project, developed a system aimed at providing a Grid-enabled environment for interactive physics analysis on handheld devices including PocketPCs and cellphones
- Helped create and manage a team of nearly fifteen research assistants
- Played a lead role in the initiation and development of the JClarens project
- Provided technical support to a team of five research assistants in the development of Grid-enabled job steering, estimation and monitoring services

SELECTED PUBLICATIONS:

- **Starburst SSD: An Efficient Protocol for Selective Dissemination.** Accepted to ICC'09, the IEEE International Conference on Communications, Dresden, Germany, 2009.
- **JClarens: A Java Framework for Developing and Deploying Web Services for Grid Computing.** Proceedings of IEEE ICWS, the International Conference of Web Services, Orlando, USA, 2005.
- **The Clarens Web Service Framework for Distributed Scientific Analysis in Grid Projects.** Proceedings of the International Conference on Parallel Processing Workshops (ICPPW), Oslo, Norway, 2005.
- **Grid Enabled Analysis for CMS: Architecture, Prototype and Status.** Proceedings of CHEP (Computing in High Energy Physics) 2004, Interlaken, Switzerland.
- **The Clarens Grid-Enabled Web Services Framework: Services and Implementation.** Proceedings of CHEP (Computing in High Energy Physics) 2004, Interlaken, Switzerland.
- **Grid-enabled Data Analysis on Handheld Devices.** Proceedings of the IEEE International Networking and Communications Conference, 2004, Lahore, Pakistan.

SELECTED ACADEMIC/RESEARCH PROJECTS

- **Starburst SSD: Selective Dissemination to Sparse Subsets in a Sensor Network:** Research project to develop a fast, energy-efficient protocol for selectively disseminating data items to a small subset of nodes that meets certain dissemination criteria in a sensor network.
- **Prototype OS implementation (Pintos):** Implemented multithreading, multiprocessing, scheduling, virtual memory and a file system on top of the Pintos Operating System as part of the CS 140 course in Stanford.
- **CS244A Networks Project:** Implemented an FTP client and large parts of the TCP/IP networking stack, including IP forwarding, sliding window protocol, RTT estimation and reliable transport as part of the CS244A programming assignments.
- **Limited Vocabulary Word Recognition Using Neural Networks:** A word classification and recognition system, based on Matlab's Neural Network toolkit, which achieved more than 75% accuracy in recognizing spoken Urdu words from a 10-word vocabulary
- **Website Builder:** A WYSIWYG webpage editor for previewing and generating on-the-fly HTML code from web pages containing text, hyperlinks, images, meta tags, background colours, and fonts. Developed in Visual C++.

TECHNICAL SKILLS:

- **Programming Languages:** Java (Networking, J2EE, JDBC, JSP/ Servlets, Java Security

and JSSE, JUnit, Swing & AWT, J2ME), C, C++, LISP, Microsoft Visual C++ (MFC and API), XML, HTML, Javascript, nesC, PHP, Ruby.

- **Databases:** MySQL, Microsoft SQL Server, Oracle, HSQLDB, SQLite, MS-Access.
- **Operating Systems:** Windows(9x/2000/XP/CE), Linux, TinyOS.
- **Tools:** Ant build tool, CVS (Concurrent Versioning System), Rational Rose, Matlab, Condor, Globus Toolkit, Apache Axis (SOAP), Apache XML-RPC, Drupal, Rails.

HONOURS & AWARDS RECEIVED:

- 1st Position in nation-wide NUST entrance test (July 2000)
- 1st Position in nation-wide test for Ministry of Science and Technology (MoST, Pakistan) Bachelors of Engineering Scholarship (November 2000)
- 2nd Prize in National Science and Technology Fair Art Competition on the topic "New Frontiers of Science" organized by Pakistan Science Foundation, 1997.
- Recipient of NUST merit scholarship throughout the undergraduate degree program

REFERENCES

Available on request.