SHOAIB AMJAD KHAN

:

:

:khan180@purdue.edu
:linkedin.com/in/shoaib-a-khan
:shoaib-a-khan.github.io

OBJECTIVE

Looking for an exciting internship opportunity involving research and development of solutions to complex problems that require solid technical knowledge and advanced programming experience.

EDUCATION

2016-Present **Purdue University, Computer Science Department**, W Lafayette, IN
Ph.D Candidate, research focus on an intersection of ***privacy, security, data analytics & machine learning***
Advisor: Prof. Mike Atallah
GPA: 3.83/4

2007–2009 **University of South Florida, Mathematics Department**, Tampa, FL
M.A. Mathematics, research focus on design of ***approximation algorithms for hypergraphs***
Advisor: Prof. Brendan Nagle
GPA: 3.83/4

2001-2005 **National Univ. of Computer & Emerging Sciences, Computer Science Department**, Lahore, Pakistan
B.S. Computer Science with Honors, final year project on *OCR for Urdu using* ***neural networks***
GPA: 3.49/4

PROFESSIONAL EXPERIENCE

2016–Present **Purdue University, Computer Science Department**, W Lafayette, IN
Graduate Teaching & Research Assistant

2015 - 2016 **Information Technology University, Computer Science Department**, Lahore, Pakistan
Teaching Fellow

2012 - 2015 **National Univ. of Computer & Emerging Sciences, Computer Science Department**, Lahore, Pakistan
Assistant Professor

2009 – 2012 **National Univ. of Computer & Emerging Sciences, Computer Science Department**, Lahore, Pakistan
Lecturer

TECHNICAL SKILLS

Languages: C#, C++/C, Java, JavaScript, Python, UML, SQL, HTML, XML, Assembly Language (Intel x88, x386, Intel 8051/52 MC series), Verilog, Prolog, LateX.

Software Tools: Visual Studio, Eclipse, Microsoft .Net Platform, Git, Atom, Visio, Rational Rose, JBuilder, ERWin, Adobe Photoshop, Macromedia Dreamweaver, Microsoft Office, Logic Works.

Database and Client/Server Technologies: Oracle 8/8i, Microsoft Access, Microsoft SQL Server.

Operating Systems: Microsoft Windows, Linux/Unix, OS X, DOS, Android, iOS.

R & D PROJECTS IMPLEMENTED

- **Search Engine (in C++):** A Local Search Engine that constituted two sub-modules, an indexing system and a querying system. The focus here was on design, implementation and testing of advanced data structures including B-Trees and Hash Tables to achieve the desired functionality efficiently.

- **Download Manager using Sockets in C++:** A multithreaded desktop application that had features like accelerate download speed, and pause or resume download from a web server on the internet.

- **Compiler for C-*ν*, a subset of C++ (in C++):** I wrote the complete compiler, which had three modules, i) Lexical analyzer, ii) Syntax analyzer, and iii) Intermediate code generator.

- **Student Registration System (in C++):** An Objected Oriented Design that exclusively focused on issues of Object Oriented Paradigm e.g. data encapsulation and polymorphism. I led a team of five through the design, implementation & testing phases of the project.

- **Academic Records and Result Compilation System (Java, JScript, SQL):** Front and back end of an online database that would help manage the academic record of students at Hailey College of Commerce - Punjab University, and provide result compilation facility the academic staff. I was part of a team of five.

- **Optical Character Recognition for Urdu Nastaleeq Script Using Neural Nets (in C#):** Studied problems hindering the development of a practical OCR system for Urdu and implemented AI solutions to overcome these. I led a team of four.

- **Pipelined MIPS Architecture (Verilog):** Architecture design of pipelined MIPS processor in Verilog.

- **Compression Software in Assembly Language:** Compressor (encryption, decryption, compression & decompression) utility using Assembly Language.

- **Chip Programmer (C & Assembly):** Complete hardware & software of the flash code memory programmer for AT89S52 microcontroller, using PC parallel port interface, also compatible with other variants of 8051/52 series having SPI interface and Serial Programming facility.

- **Various projects using Atmel® 8051/52 microcontroller series including (C & Assembly):**
  - EEPROM (93C66, I^2C mode programming) interface
  - DC motor speed control using Pulse Width Modulation
  - Sine Wave Synthesis
  - Bipolar stepper motor control
  - Keypad & 7-Segment Decoder (x4) interface
  - Triac based AC voltage control
  - Dual slope volt meter & A-D converter

R & D PROJECTS MENTORED

- **Open Source iPhone to Android App Conversion Tool:** A formal language translation tool converting code written in Objective C to Java code. The tool is extensible and allows for updates in API mapping.

- **EmoTunes:** Using brain wave data from EEG to detect the present emotional state of the user and generating playlists to complement or supplement the emotional state of the user.

- **An Eye for Blind:** Using a simple VGA camera and a Depth Camera (e.g. Microsoft Kinect), helping the blind to find their way around by detecting and identifying obstacles. The project is extensible and aims to include navigation maps to guide the visually impaired.

RESEARCH TALKS & WORKSHOPS

- Workshop for MPhil students on "*Quantum Computing*", Fall 2014, Kinnaird College for Women, Lahore, Pakistan.
- Research Talk: "*Quantum Computation: Its scope and limits*", May 2014, Kinnaird College for Women, Lahore, Pakistan.
- Workshop for MPhil students on "*Computability and Complexity*", Spring 2014, Kinnaird College for Women, Lahore, Pakistan.
- Research Talk: "*Soundness of Inprocessing in Clause Sharing SAT Solvers*" [N. Manthey,T. Philipp, C. Wernhard], August 2013, International Center for Computational Logic, TU Dresden, Germany.
- Research Talk: "*Research as a career path for graduating students*", IT Conference SOFTEC, April 2013, National University of Computer & Emerging Sciences, Lahore, Pakistan.
- Research Talk: "*An Algorithmic Hypergraph Regularity Method*", Theoretical Computer Science Workshop, Summer 2010, Forman Christian College University, Lahore, Pakistan.
- Workshop Lecture: "*Logic & Proofs*", Theoretical Computer Science Workshop, Summer 2010, Forman Christian College University, Lahore, Pakistan.
- Workshop Lecture: "*Countability & Diagonalization*", Theoretical Computer Science Workshop, Summer 2010, Forman Christian College University, Lahore, Pakistan.

PUBLICATIONS

- Shoaib A. Khan, B. Nagle, “A Hypergraph Regularity Method for Linear Hypergraphs, with Applications”, LAP Lambert Academic Publishing, 2011.
- Shoaib A. Khan, "A Hypergraph Regularity Method for Linear Hypergraphs," Master’sThesis, University of South Florida, USA, 2009.

HONORS & AWARDS

2016 - Present	**Graduate Assistantship** by Purdue University.
2007 - 2009	**Fulbright Scholarship** by United States Education Foundation for Pakistan.
2001 - 2005	**Outstanding Talent Scholarship** by Punjab Information Technology Board.
2001 - 2005	**Dean’s Honor’s List** at National University of Computer & Emerging Sciences.
Fall 2001	**University Scholarship for Batch Topper** by National University of Computer & Emerging Sciences.

MENTORING & LEADERSHIP

2015 - 2016	**Faculty Advisor** for undergraduate students, advising them on courses to select for enrollment.
2012 - 2015	**Student Counselor** for undergraduate students on academic warning, mentoring them to avoid suspension.
2010 - 2015	**Project Mentor** for groups of senior students working on their final year projects towards BS(CS) degree.
2004 - 2005	**Chairmanship** of ACM - NUCES Lahore Chapter. We organized a Dynamic Programming Competition.
2000 - 2001	**Team Captain** for our high school cricket team in senior year. We won intramural tournament that year.

CO-CURRICULAR

- Participation and awards in several bi-lingual debate/declamation contests.
- SOFTEC Stage Secretary, 2003 – 2005.
- Cricket, Basket-Ball, Soccer, Squash.
- Trekking, Mountaineering, Paragliding, Sky-diving.
- Reading, Philosophizing.
- Family Time, Travelling.

REFERENCES

To be furnished on request.