

M. Talha Imran

W209 Westgate Building
University Park,
Pennsylvania 16802

Email: timran@psu.edu
Website: www.talhairan.com
Phone: +1 (814) 699-1670

RESEARCH INTERESTS

Exploring design of practical and performant *Disaggregated Memory Systems* housing heterogeneous memory and compute units in modern datacenters.

EDUCATION

- **Ph.D. Computer Science and Engineering** (Aug 2018 – Present)
Pennsylvania State University
GPA: 3.86/4.00
Advisor: Prof. Aasheesh Kolli
- **Bachelor of Electrical Engineering** (Sep 2011 - Jun 2015)
National University of Sciences and Technology, Pakistan
GPA: 3.96/4.00 - Silver Medal

RESEARCH AND WORK EXPERIENCE

- **Graduate Student Research Assistant** (Aug 2018 - Present)
Pennsylvania State University
Exploring design of performant *Disaggregated Memory Systems* to improve resource utilization for rack-scale computing. We aim to reconsider effective organization of specialized datacenter resources under this new paradigm and to employ HW-SW co-design for developing practical systems.
- **Sr. Software Development Engineer** (3 years: Aug 2017 – Jul 2018
Jul 2015 – Jul 2017)
Software Development Engineer
Mentor Graphics, Pakistan (now Mentor - a Siemens Business)
Team: Sourcery CodeBench IDE
Added early initialization and multicore (GDB) debug support for latest embedded boards running baremetal apps and OS kernels (cross toolchains config., scratch codes dev., early init. via JTAG, Linux JTAG debug patches). Enhanced HW testing infrastructure for verifying *build* and *debug* workflows. We adhered to release cycles for multi-component IDE in a geographically dispersed team; collaborating with open source teams (GCC, GDB, QEMU) to fix workflow bugs.
- **Undergrad Research Assistant** (1 year: Aug 2014 – Jun 2015)
RISE Research Center, National University of Sciences and Technology, Pakistan
Project: Humanoids & Legged Robotics - RoboCup SPL 2015
Software Architecture & Tools for Humanoid Robots - Programmed humanoid NAO robots for playing soccer autonomously as a team. Worked on system software architecture, footstep and planning and utilities for remote system visualization in realtime.
- **Software Development Intern** (1 year: Jun 2013 – Jul 2014)
CoNNekT Lab, National University of Sciences and Technology, Pakistan
Project: Safety Assurance in High Stress Environment
Developed a GUI front-end and middleware application in JAVA for receiving, analyzing and visualizing data from a low-power Wireless Sensor Network for underground mine monitoring and safety.

SKILLS

- Programming:
Professional proficiency: C++(17), JAVA, C
Basic proficiency: Python, Assembly, OpenCL, Verilog
- Dev Tools: Linux Dev Environment, Git/SVN, MATLAB, Xilinx Vivado, ARM DS-5
- Agile Development, Build Systems, Remote Dev. Infrastructure

RELEVANT COURSEWORK

Pennsylvania State University (Graduate)

Fundamental of Computer Architectures (CSE-530), Algorithm Design and Analysis (CSE-565), Binary Level Analysis (CSE-597-03 Special Topics)*, Language based Security (CSE-597-07 Special Topics)*

* Ongoing in Spring '19

National University of Sciences and Technology (Undergraduate)

Digital System Design (EE-421), Embedded System Design (EE-423), Digital Signal Processing (EE-330), Digital Image Processing (EE-333)

TEACHING

Graduate Teaching Assistant: Introduction to Computer Architecture (CMPEN-431), Penn State University (Spring '19)

AWARDS, HONORS & SCHOLARSHIPS

- Graduate Fellowship at Pennsylvania State University (2018-2019)
- Team Role Model award at Mentor Graphics annual appraisal 2017
- Chancellor's Silver Medal – 2nd best in academics with a CGPA of 3.96 / 4.00 in BEE 2011-2015 batch.
- Team lead of only South Asian Team to qualify for RoboCup SPL 2015 – Team-NUST
- Bachelor Final-Year-Project featured at IEEE International Conference on Robotics and Automation (ICRA) 2015 Developing Countries Forum.
- NUST High Achievers' Scholarship – merit scholarship in all semesters