

KHAN SHAIKHUL HADI

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SUMMARY

PhD candidate specialized in **Computer Architecture** with strong background **memory subsystem, system simulation, security & ASIC hardware design**. Current research focuses on performance, correctness, and crash recovery of the CXL attached persistent memory system for parallel programming.

EDUCATION

- **PhD in Computer and Information Science** | UNIVERSITY OF CENTRAL FLORIDA (UCF) Expected graduation : 4/2026
- **M.Sc. in Computer Science** | UNIVERSITY OF CENTRAL FLORIDA (UCF)
- **B.Sc in Electrical Engineering** | BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

SKILLS

Programming: C++ (OpenMP, Object Oriented Programming), C, Python, Bash script, Verilog, tcl


Simulator : Gem5 Simulator, Sniper Multi-Core Simulator

Design Tool: Cadence Design Suit, MATLAB

WORK EXPERIENCE

- **Graduate Research Assistant** | ARPERS RESEARCH GROUP, UCF 2021-Present
- **Graduate Teacher Assistant** | SCHOOL OF ENGINEERING, UCF Fall,2022
- **Research Engineer** | BUET-ENERGYPAC RESEARCH COLLABORATION HEQEP SUB-PROJECT CP#3817 2017-2018

PUBLICATIONS

- *Hardware Support for Durable Atomic Instructions for Persistent Parallel Programming*  DAC'23
- *Optoelectronic Properties of InGaAs/InP Single Photon Avalanche Diode*  ICTP'2017

ASIC DESIGN

BUET VLSI Standard Cell Library

TSMC 180nm technology based 7 track standard cells library. Standard cell layout were characterized using Liberate and Abstract Generator of Cadence.

BUET LED Driver Controller Digital IC

Fabricated on June, 2018

A custom mixed signal constant current LED driver controller was designed using BUET VLSI Standard Cell library.




ACADEMIC ACTIVITY

AWARD 2025 FCI Student Scholarship, UCF

VOLUNTEER WORK SEED'21, ISCA'23

PUBLIC SPEAKING DAC'23, NVMW'24

ACADEMIC PROJECTS

- **A Technical Analysis of RedAlert Ransomware - Targeting Virtual Machine Files :** A through technical analysis (static & dynamic) of RedAlert (N13V) malware sample. Analyzed deep web for victim data leaks, ransom instructions and criminal payment methods.
- **Sentiment analysis of stocks from financial-news headline with twitter feedback :** Analyze public sentiment for a company stock based on relevant news headlines using Natural Language Toolkit (nltk) library. For each headline, relevant tweets also analyzed for public sentiment to compare with headline sentiment. 
- **Spectre: What do we know so far :** A review article on Spectre vulnerability in modern processors to provide insight about state of research on specter vulnerability, proposed and deployed solutions.
- **Personal OS :** Developed a bare minimum personal operating system to understand interaction between OS and computer hardware. Current state features boot-loader, interrupt handler, keyboard input and video driver. 
- **High-Accuracy Detection of Early Parkinson's Disease through Multi modal Features and Machine Learning :** Early detection of Parkinson's disease implementation using Logistic Regression, Boosted Tree & SVM with updated data based on pre-published research work.
- **8 bit Specialized SAP microprocessor :** 8-bit, single bus, 16 instruction SAP microarchitecture circuit with 64KB memory is designed in Proteus Circuit Simulator. C++ based compiler design to convert assembly instruction to binary input for the circuit.
- **Load-flow analysis tool :** MATLAB based Gauss-seidel load flow analysis tool to analyze up to 100 power grid bus with MATLAB GUI user interface support. 

WORKSHOP

- **HPC Workshop: Big Data and Machine Learning** | ORGANIZER :PITTSBURGH SUPERCOMPUTING CENTER 2 Days
- **GEM5 BOOTCAMP 2022** | ORGANIZER :UNIVERSITY OF CALIFORNIA, DAVIS 5 Days
- **Workshop on RISC-V Technology and SiFive Tutorial** | ORGANIZER :SIFIVE INC & IEEE BANGLADESH One Day

CERTIFICATION

- **Fundamentals of Parallelism on Intel Architecture** | INTEL (COURSERA) Aug 2020
- **Unlocking Information Security** | TEL AVIV UNIVERSITY (ISRAELX) Aug 2020
- **IT Fundamentals for Cybersecurity Specialization** | IBM (COURSERA) Oct 2020
- **Using Python to Interact with the Operating System** | GOOGLE (COURSERA) Oct 2020