Ali Jafar

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Education

University of Illinois at Chicago (UIC) Chicago,IL
Masters of Science in Electrical and Computer Engineering *Jan. 2023 – Dec. 2024*

University of Illinois at Chicago (UIC) Chicago, IL
Bachelors of Science in Computer Engineering *Aug. 2018 – May 2021*

Tracks

Computer and Networked Systems: Design and Optimization of Computer Systems
Digital Systems and VLSI: Design, Analysis and Fabrication of Electronic Components and Systems
Relevant Courses: OS, Embedded Systems, Neural Networks, Robotics Control, HPC & Cloud, Signals & Digital Communication

Technical Skills

Lab Equipment: Oscilloscope, Multimeter, Function Generator, Power Supply, Soldering Station, Breadboard
Architectures: CPU, GPU , Neural Networks, Data Center & Cloud
Software: C, C++, Python, MATLAB, Assembly, HDL/Verilog

Experience

Undergraduate Teaching Assistant Jan. 2019 – May 2021
University of Illinois at Chicago (UIC) *Chicago, IL*

- Introduced fundamentals of computer programming using C .
- Instructed groups of students on topics ranging from primitive data types to data structures.
- Created a finer student learning experience through various visual aids.
- Hosted help sessions throughout week for assisting and tutoring the students with course material.
- Assisted in running the class labs, both in person and virtually.
- Conducted coding interviews to assess students' progression with course material.
- Supported professor conducted meetings.

Projects

Line Following Robot | *C, Altium*

- Contributed in designing custom PCB using Altium.
- Developed custom software for camera sensing and each sub system of the robot.
- Designed and tested custom circuits for motor control, boost converter, steering.
- Placed 1^{st} against classmates in random track race with fastest time.

Lidar Object Detector | *Linux, Python*

- Developed a custom Computer Vision algorithm for object detection with Lidar.
- Developed Linux environment in Nvidia Jetson Nano to communicate with sensors.
- Contributed in design and testing hardware based off engineering requirements.
- Coordinated with team to meet requirements and deadlines.

ML & Neural Network | *Python*

- **Forest Fires Classification**
- **Reinforcement Learning Based TCP protocol**

Simulators | *Python*

- **Circuit Satisfiability Simulation**
- **MIPs Assembly Simulator** CPU single/multi cycle & Pipeline Architecture
- **Custom 8-bit CPU HASH Simulation**