Curriculum Vitae

Jaiaid Mobin

About Me

I am looking for Summer, 2023 (availability from 05/16/2023 to 08/18/2023) internship. I am interested in getting opportunities where I can learn the state of the art in high performance computer systems, distributed systems and overall how computer system works under the hood.

I am a first year student at Rochester Institute of Technology (RIT) in Computing and Information Science Ph.D. program, started on August, 2022. Currently, I am working as a graduate research assistant in High Performance Distributed Systems Laboratory (HPDSL) in . I am working under supervision of Dr. M. Mustafa Rafique. My research interest is disaggregated memory, CXL memory device, high performance computing.

Contact Information

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Self Introductory Links

Github https://github.com/Jaiaid

Publications Google Scholar

Linkedin link

Education

- **B.Sc. in Computer Science and Engineering** Dept. of Computer Science and Engineering, Bangladesh University of Engineering and Technology (BUET).
  Graduation Year - 2017, CGPA - 3.57

- **M.Sc. in Computer Science and Engineering (Part time status)** Dept. of Computer Science and Engineering, Bangladesh University of Engineering and Technology (BUET).
  Graduation Year - 2022
  Thesis Title - Transit Network Design For Evacuation Modeling Using Heuristic and Multi-Objective Optimization Based Approaches

Work Experience

- Senior Software Engineer
  - BJIT Ltd., from November,2020 - April, 2022
- Software Engineer
  - BJIT Ltd., from July,2018 - October,2020

Tools I have used in Personal/Academic/Professional projects

*Each category items are listed in descending order of usage frequency

•**Programming language :** Python3, C++, C, Bash, C#, Java, Javascript, x86 Assembly(fasm), Php5

•**Operating Systems :** Linux(Ubuntu), Windows10

•**Hypervisor system :** VirtualBox, Linux KVM

•**Build system:** Make, CMake, Bazel

•**Container management system :** Docker

•**Machine Learning/Vision Development Tools:** OpenCV, Scikit-learn, Tensorflow, Keras

•**H/W Development Platform :** Arduino, Raspberry PI

•**Networking Tools :** Packettracer, Wireshark

•**Web Development Framework :** Laravel5, Codeigniter

Professional Project Work

- **Device Interfacing Software Improvement**
  - Contributed to build and solve issues in building a codebase in MSVC2019 which is earlier built using MSVC2012 and clear documentation was not available
  - Fixed bug in C# codebase and implemented a small feature.
- **Virtual Background Feature Implement**
  - Used google mediapipe sdk to implement library to remove background, add background, blur background (provided as static library for Windows)
  - Library is developed using C++ (MSVC2017) for 64bit platform, library using mediapipe SDK is partially built using Bazel build system.
  - Resolved some build issues to build mediapipe code using MSVC2017 (github provided version with necessary feature can be built only by MSVC2019)
- **Directshow Source Filter Development**
  - Repurposed code from existing MIT licensed project to create a source filter
  - Analyzed requirement of our project and capabilities of directshow source filter to report what is feasible and accordingly influenced application architecture
  - Implemented simple IPC mechanism to facilitate communication between COM component and application
  - Worked on application backend to interface with custom source filter using C++ (MSVC++14) and C#(.NET 4.7)
- **Device Control Based on Computer Vision**
  - Developed Windows application using C++/CLR and VS2015
  - Developed simple custom solutions based on computer vision algorithms using **OpenCV** API to do particular object presence detection for application use case scenario and showed their effectiveness using client provided dataset
  - Implemented object detection system in **C++** using **OpenVINO** sdk for **Windows10** based application
  - Implemented relay control over tcp in **C++** using windows networking library and knowledge from the relay documentation
- **Smartphone User Detection**
  - Collected Data and trained machine learning model inspired from a given paper in **Python3.6** using **numpy, scikit-learn** package

- Implemented simple communication over http protocol locally to connect front end code and backend ml inference using **flask, json** packege

- **Content Based http/https Traffic Filtering**
  - Implemented local cache in **C++** using **sqlite** library in **Windows** client PC**(Windows10)**) application
  - Written simple **javascript** for browser based control panel of client PC application

Academic Project Work

- **Sign Language Translator :**
  - Implemented gravity corrected gyroscope and accelerometer value reading system from **MPU6050** breakout board using https://github.com/jrowberg/i2cdevlib/tree/master/Arduino/MPU6050 library to interface with Arduino mega
  - Created a representation of the needed movement to indicate 17 signs
- **Obstacle Detection and Surface plotter :**
  - Written code for a depth measurement system using **HC-SR04** sonar sensor controlled by ATmega32 microcontroller
  - Implemented a plotting mechanism on 12864ZW LCD screen to depict the 2d surface topology
- **A Cineplex Management Web Application**
  - Written backend code in **php5 on Laravel4**
  - Database implementation for **Mysql** DBMS

Other Accomplishments and Certifications

- Bangladesh-Japan Engineers Training Program(BJET) 2nd batch (March,2018-May,2018)
- ITEE FE exam March 2018 Top Scorer among ITPEC countries (Examinee no FE01-0081)
- Coursera Google Cloud Platform Fundamentals: Core Infrastructure
- Coursera Networking in Google Cloud: Defining and Implementing Networks