Faiyaz A. Chowdhury

Portfolio: faiyazchowdhury.github.io • Atlanta, GA • (404) 993-8179 • faiyaz.chowdhury0@gmail.com
H-1B Visa • **Full-Time • Software Engineer •** ***C++ 17, Rust, Python*** • Willing to Relocate

EXPERIENCE

OM PARTNERS – *C++ Software Engineer* *June 2022 – Present*
- Implementing migration of monolith to multi-server–multi-client architecture to optimize for performance and scalability
- Leading design and development of application launcher to expedite development, testing and deployment
- Led C++ study sessions to discuss modern C++ 17 concepts to encourage effective memory-safety and thread-safety

BERKSHIRE GREY ROBOTICS – *Electrical Engineer & PLC Developer* *March 2021 – May 2022*
- Implemented and debugged software, electrical and hardware with interdisciplinary team, achieving install of $36M project
- Analyzed root cause of customer site bottlenecks and implemented software solutions, increasing throughput by 37%
- Implemented Python web scraper to configure devices to prevent risk of self-harm, preventing damages up to $54000
- Engineered tote lifter's software, electrical, and mechanical components with stateless design for ease of use and debugging

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA *August 2014 – Dec 2019*
- Graduate Teaching Assistant for Biomedical Instrumentation, and Digital Circuit Design Lab
- Undergraduate Teaching Assistant for Digital Circuit Design Lab, and Analog Circuit Design Lab

LETZCHILL – *Creator, App Developer* *September 2020 – May 2021*
- Designed and released an iOS and Android hangout app, using Flutter, Cloud Firestore and Google Cloud Platform
- Restructured database and modified TypeScript Google Cloud Functions to reduce write to database cost by ~40%

EDUCATION

Georgia Institute of Technology, Atlanta, GA *GPA: 3.7*
Master of Science in Electrical and Computer Engineering *Aug 2018 – Dec 2019*
Bachelor of Science in Electrical Engineering, Minor in Robotics *Aug 2014 – May 2018*

ROBOTICS PROJECTS

COMPUTER VISION PROJECTS *January 2017 – May 2019*
- Reduced computation time of 2D-DFT from 289 seconds to 3 seconds in using CUDA and a GPU
- Created wearable camera to read out text for the visually impaired, using Google's OCR and text-to-speech library
- Implemented object recognition in MATLAB to reach 90% accuracy deciding between faces and cars using feature spaces
- Programmed a TurtleBot in Python ROS to autonomously navigate its surroundings without collision with an Xbox Kinect
- Identified movement of snapshots of several fish using optical flow through gradient of image intensity

PATH PLANNING PROJECTS *August 2016 – December 2016*
- Built bipedal robot that can (moon)walk using path planning through resolved-rate control and trajectory generation
- Implemented particle filter to enable a sightless PAC-MAN to locate ghost by hearing stochastically diffusing sounds
- Modified swarm robotics consensus to represent enmity to create more creative decentralized network control patterns
- Localized AmigoBot using odomentry and sonar sensors whilst identifying locations of desired objects

BIOMEDICAL WEARABLE DEVICE PROJECTS *January 2018 – May 2019*
- Engineered a posture-improving belt with a handmade EEG and an IMU to alert if user's lower back is too loose or tight
- Recreated P300 experiment with a Muse (5 EEG BCI) and CNN, to detect if user's brain electrically responded to an event
- Designed and created VR pair of gloves with several IMUs and pressure sensors, that is also a hand keyboard and mouse

HELICOPTER MODEL REFERENCE ADAPTIVE CONTROL *January 2019 – May 2019*
- Simulated helicopter set-point trajectory control in MATLAB using MRAC control in nonlinear MIMO system
- Optimized gains of feedback controller using LQR and adapted these gains using CARE to match plant behavior to model
- Achieved full position controllability with differential flatness and eliminated nonlinear behavior with backstepping

SKILLS

Coding: C++ 2017, Rust, Python, C#, JavaScript, Batch/Shell Scripting
Courses: Modeling Neural Systems, Nonlinear Adaptive & Digital Control, Robotics, Computer Vision, AI, Dynamics, DSP
Interests: Music, Robotics, Psychology, Languages, Dancing