# Faiyaz A. Chowdhury

**Portfolio: faiyazchowdhury.github.io** • Boston, MA 02144 • (404) 993-8179 • faiyaz.chowdhury0@gmail.com
H-1B Visa • **Full-Time • Motion Control and Software Engineering** • Willing to Relocate

## EDUCATION

**GEORGIA INSTITUTE OF TECHNOLOGY**, Atlanta, GA *August 2014 – Dec 2019*
Master of Science in Electrical and Computer Engineering, Controls Specialization *GPA 3.66*
Bachelor of Science in Electrical Engineering, Robotics Minor *GPA 3.71*

## SKILLS

**Programming:** C++, Python, Java, MATLAB, PLC, Dart (Flutter), Javascript, C, Assembly, VHDL, HTML, CSS
**Courses:** State-Space Control, PID Control, Digital Control, Robotics, Computer Vision, DSA, AI, Dynamics, DSP

## EXPERIENCE

**BERKSHIRE GREY** – *PLC Developer, Electrical Engineer* *March 2021 – Present*
- Implemented and smoke tested PLC code in R&D site for conveyance system interfacing with robotic automation systems
- Identified, tracked and communicated electrical and software issues at customer sites achieving 2 fastest and largest installs
- Analyzed root cause of customer site bottlenecks and implemented solutions, increasing throughput by 30%
- Modified Python web scraper to configure devices to prevent potential risk of failure, preventing damages up to $54000
- Implementing conveyor simulation tool in Python to analyze efficiency of different conveyor designs
- Leading software and electrical design of one of Berkshire Grey's peripheral products to aid the robotic system

**LETZCHILL** – *App Developer* *September 2020 – May 2021*
- Restructured database of iOS and Android Flutter App using Javascript in Google Cloud Functions to reduce cost by 40%
- Designing and updating app code and cloud functions to implement a group hangout feature based on user feedback

**GEORGIA TECH SCHOOL OF ECE** – *Graduate & Undergraduate Teaching Assistant* *May 2016 – December 2019*
- Taught C++ embedded design, digital and analog circuits, hosted study sessions and designed labs for several ECE classes

## PROJECTS

**PAC-MAN GAME WITH ARTIFICIAL INTELLIGENCE** *January 2017 – May 2018*
- Assembled a Pac-Man themed game on Mbed microcontroller, with gaming mechanics developed in C++
- Implemented searching algorithms, reinforcement learning and particle filters in Python to win game in stochastic systems

**HELICOPTER MODEL REFERENCE ADAPTIVE CONTROL** *January 2019 – May 2019*
- Simulated unknown 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

**BIPEDAL ROBOT LIMB PATH PLANNING** *August 2016 – December 2016*
- Built and enabled a bipedal robot to walk with OpenCM microcontroller using MATLAB dynamixel interface and servos
- Implemented forward kinematics to track the robot feet orientation with respect to the robot waist
- Implemented path planning using resolved-rate control and Optragen to generate trajectory that minimizes energy cost

**COMPUTER VISION PROJECTS** *January 2017 – May 2019*
- Reduced computation time of 2D-DFT from 289 seconds to 3 seconds in C++ CUDA using GPU cache memory
- 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

## LEADERSHIP ROLES

**UNICYCLING CLUB GEORGIA TECH** – *President* *January 2016 – September 2019*
- Taught unicycling and set up weekly meetings, SGA budget, trips and club merchandise, quadrupling membership

**ETA KAPPA NU, BETA MU CHAPTER** – *Picnic Chair* *January 2019 – December 2019*
- Avoided unnecessary recurring cost of annual ECE Spring Picnic saving $475 off the annual picnic budget