Faiyaz A. Chowdhury

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EAD/OPT Authorized • **Full-Time** • **Motion Control & Software Engineering** • Graduated • Willing to Relocate

OBJECTIVE

Electrical and Computer Engineering M.S. Georgia Tech graduate seeking Motion Control or Software Engineering position.

EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA *GPA 3.71*
Master of Science in Electrical and Computer Engineering, Controls Specialization *August 2018 – Dec 2019*
Bachelor of Science in Electrical Engineering, Robotics Minor *August 2014 – May 2018*

SKILLS

Programming: MATLAB, C++ (CUDA), Java, Dart, Python (ROS), Assembly, VHDL, VBA, CSS, HTML, R
Software: CCS, Quartus II, NI Multisim, LTspice, NI ELVIS, LabVIEW, AWS, Autodesk Inventor, EAGLE (PCB)
Courses: State-Space Control, PID Control, Digital Control, Robotics, Computer Vision, DSA, AI, Dynamics, DSP

EXPERIENCE

LetzChill – *Founder, App Developer* *June 2020 – Present*
- Developed an Android and iOS app in Dart that lets friends meet without any prior planning after viewing days of isolation
- Improved user experience by implementing contacts, location and notification features and server-side cloud functions
- Structured database, cloud functions, and security rules to secure user privacy and minimize writes to reduce cost

BIOMEDICAL, DIGIAL & ANALOG ELEC. – *Graduate & Undergrad Teaching Assistant* *May 2016 – December 2019*
- Taught analog and C++ embedded design concepts to class involving design and creation of biomedical devices
- Debugged digital and analog circuits using oscilloscopes and logic analyzers and explained related circuit concepts
- Oversaw projects involving programming DE2 FPGA in VHDL and SPICE to implement localization tasks with AmigoBot

GEORGIA TECH INFORMATION TECHNOLOGY – *Web Developer* *May 2019 – August 2019*
- Identified and presented valuable actionable insights to clients using data acquired from Google Analytics
- Increased Exit % and reduced Pages per View by editing and testing websites using HTML, CSS, and Drupal

PROJECTS Atlanta, GA

HELICOPTER 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

PAC-MAN VIDEOGAME *January 2017 – May 2018*
- Assembled a Pac-Man themed game console with an Mbed kit, with gaming mechanics developed in C++
- Implemented searching algorithms, reinforcement learning and particle filters in Python to win game in a stochastic system

BIPEDAL WALKING ROBOT *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 cache memory inside a GPU
- 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

SWARM ROBOT DECENTRALIZED NETWORKED CONTROL *August 2019 – December 2019*
- Controlled swarm of robots using Robotarium MATLAB API to organize according to given agreement and animosity
- Adjusted consensus control laws so that robots would reach Lyapunov stability whist keeping disagreeing robots apart

CAPSTONE PROJECT GLOVE CONTROLLER *August 2017 – May 2018*

- Designed and built a glove controller that controls computer mouse and keyboard, with VR capabilities
- Achieved limited finger gesture control by configuring 5 pressure sensors and 5 IMUs
- Programmed the ESP32 Thing microcontroller in C++ to read and transmit sensor inputs to computer via Bluetooth

AMIGOBOT SONAR LOCALIZATION AND MAPPING *January 2016 – May 2016*

- Mapped surroundings of AmigoBot controlled by DE2 FPGA using 8 sonar sensors and localized robot using odometry
- Programmed an FPGA in VHDL to create a virtual simple computer capable of following OPCODE assembly instructions
- Developed and tested solution in assembly language that navigates a grid to map the location of its obstacles

SPEAKER CABINET DEIGN *August 2017 – December 2017*

- Determined the ideal dimensions of a speaker box to optimally produce sound which can resonate within hearing range
- Tested the impedance of the speaker coil to represent entire electro-mechanical-acoustic system as an electrical circuit
- Reversed the desired transfer function to calculate the speaker box dimensions that satisfied the required resonance

LEADERSHIP ROLES Atlanta, GA

UNICYCLING CLUB GEROGIA TECH – *President* *January 2016 – September 2019*
ETA KAPPA NU, BETA MU CHAPTER – *Picnic Chair, Initiation Chair* *January 2019 – December 2019*
HIGHVIEW TECHNOLOGIES – *Startup Chief Marketing Officer (CMO)* *May 2019 – September 2019*