1-(646)-804-8904
jarena000@citymail.cuny.edu

JOHN ARENA

jaeportfolio.github.io

EDUCATION

New York, NY   **The City College of New York**   **Feb 2015 - May 2020**

- B.E. in Computer Engineering, May 2020. GPA: 3.056
- Undergraduate Courses: Comp. Architecture, Algorithms, Soft. Design Lab, Software Engineering, EE Labs

Languages and Technologies

- C, Java, Python, x86, C++, HTML, CSS, VHDL
- STM32Cube, Git, Visual Studio, VS Code, MATLAB, Quartus, KiCAD, AutoCAD, Rigol Scope 1054Z

PROJECTS

- **TF2 Sentry** (Fall 2020 – Summer 2021).
  - Created a real life working sentry based off the sentry in Team Fortress 2. Prototyped on **STM Nucleo F7**.
  - Created code to operate the motor controller/stepper motor.
  - Created a DAC audio system to play sounds through an amplifier to a speaker.
  - Created code to make object detection using ultrasonic sensors.
  - Created and implemented Bluetooth connectivity to communicate to the smartphone PDA app.
  - Created a **Java app** for the smartphone to act as the Sentry's PDA. Connects to the STM32F7 via Bluetooth implemented by me. Created GUI and animations for the PDA app.
  - Designed **PCB** for the final design with an STM chip, along with a power circuit.
  - Tested code and functions using debugging methods along with **oscilloscope**.
- **Smart eBike Kit (Senior Capstone) – Team Leader** (Fall 2019-Spring 2020).
  - A conversion kit which converts a mountain bike into an eBike w/ object detection & a smartphone app.
  - Organized weekly team meetings for designs, papers, presentations, etc. Delegated tasks.
  - Designed PCBs for eBrake/speedometer sensors, turn signals & current divider for the DC/DC converter.
  - Designed 3D housings for eBrake and speedometer sensors.
  - Created backend code for app setup on Raspberry Pi and for the speedometers and turn signal sensors.
  - Setup the smartphone app and created GUI.
  - Motor design/placement and simulations of motor performance.
  - Testing of 18650 Li-Ion cells for battery pack for the eBike.
- **32-bit CPU** (Spring 2019).
  - 32-bit CPU implemented using VHDL in Quartus.
  - Designed and implemented Register, Instruction Memory, ALU, Alu Control, Data Memory, Control Unit.
  - Implemented LOADI, ORI, ADD, SUB, AND, OR, STL, SW, LW.
  - Implemented onto FPGA board. Designed to take 32-bit instructions with switches.
- **Text Editor** (Fall 2017).
  - Created a text editor using ASM x86 with GUI based on notepad.
  - Implemented: Open, read, save & close file. Insert and Overtype Mode. Font Color. Encrypt/Decrypt.

EMPLOYMENT

IT (In Person/Remote)   **RFCUNY-PS1 Bergen**   **Jan 2020-Sept 2020**

- Resolved 71 existing problems within 5 weeks of starting.
- Reduced response time of issues from within a week to within 24-36 hours.
- Cleaned out and organized tech storage closet. Created labeling system for organization.

Tutor (Remote)   **Varsity Tutors**   **April 2018-Current**

- Tutoring various subjects through Varsity Tutors with an average score of 5/5 by clients.
- Have brought students a grade level up after tutoring completed.

AFFILIATIONS AND AWARDS

- **Dean's List:** 2020
- **IEEE Membership:** Institute of Electrical and Electronics Engineers
- **Presidential Scholarship, New York Institute of Technology:** $16,000 scholarship award.

LANGUAGES

- **German:** (A1 Level).