

# JULIETTE ROCCO

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## EDUCATION

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### University of Waterloo

BASc, Computer Engineering (2018- 2024)

*Courses: Algorithms & Data Structures, Computer Architecture, Operating Systems, Embedded Microprocessors, Digital Hardware*

## EXPERIENCE

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### Hypeshot Inc - Blockchain Engineering Intern, Fullstack Developer Intern

Jan 2022 - Apr 2022

New York City, NY

**Solidity, JavaScript, React.js, React Native, Twilio, AWS, Polygon, Pinata**

- Developed conference call extension for fantasy sports viewers featuring host functionality by utilizing the Twilio Node.js REST APIs.
- Researched and implemented an NFT encryption and decryption service which stored encrypted media in an IPFS and AWS bucket.
- Created mobile and desktop NFT music player to take decrypted data from token and convert it into an MP3 playable song.
- Updated smart contracts and designed various application pages to interface with creator owned and uploadable content.

### Motive (Formerly KeepTruckin) - Software Engineering Intern

May 2021 - Aug 2021

San Francisco, CA

**Golang, Ruby on Rails, PostgreSQL, AWS, Docker**

- Developed two high-demand asynchronous administration tools to query, upload and export compliance logistic data for legal cases.
- Implemented two API endpoints for a new feature and wrote extensive end-to-end testing on the implementations to validate.
- Created new back burner tubes and data monitors as a part of the process of switching to a new infrastructure as code tool.
- Refactored and optimized existing endpoints to improve and reduce the amount of data queried from databases.

### AvidBots Corp. - Electrical Engineering Intern

Jan 2020 - Apr 2020

Kitchener, ON

**Micro-soldering, Data Acquisition, R, Visio**

- Designed and built the prototype electrical system for a new product and created schematics to document the design process.
- Conducted thermal testing and data acquisition on robot cleaning heads and CPUs to identify performance standards.
- Troubleshoot PCBs by replacing and micro-soldering components that malfunctioned during unit testing.
- Using ToF and ultrasonic sensors, collected data plots in R to write a product proposal on implementing such sensor technologies.

### ConsenSys - Fullstack Developer Intern

Jan 2019 - Apr 2019

Waterloo, ON

**JavaScript, Python, React.js, Solidity, Gatsby.js, Node.js, Postman, Git**

- Deployed a web API and UI for the Kauri blockchain documentation platform to convert and import XML data to Markdown format.
- Created a code coverage module to analyze smart contract efficiency which led to optimizations in code usage by 90%.
- Wrote and published 3 technical documentation series for beginner users to blockchain technologies.

## PROJECTS

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### Real Time Operating System

**C, Keil  $\mu$ Vision**

- RTOS designed for the ARM Cortex M3 microcontroller. Features memory allocation, task management, and console I/O.

### Smart Recommendation Generator

**JavaScript, Express.js, HTML, CSS**

- Created a RESTful web API and UI that analyzes media databases to make smart recommendations using a randomization algorithm.

### FPGA Systolic Array

**Verilog, Vivado, Modelsim, Docker**

- Matrix multiplication bit streaming systolic array hardware module created for a hybrid FPGA and ARM SoC.

### Smart Mirror

**Python, JavaScript, Google Cloud Platform, Linux**

- Refurbished a broken monitor and programmed a Raspberry Pi to create a real time interactive smart mirror.
- Utilized GCP and the Google AIY Voice Kit to create voice-activated features using speech-to-text recognition and conversion APIs.

### 32-Bit RISC-V Processor

**Verilog**

- Designing a cycle-accurate implementation of a 32-bit processor based on the RISC-V architecture (currently working on).