# Robin (Zihao) Lin

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## EDUCATION

**Cornell University — College of Engineering**, *Ithaca, NY*
*Bachelor of Science in Electrical and Computer Engineering, Minor in Computer Science* *Aug. 2019 – May. 2022*
Rising Junior (Third Year), GPA: 3.98, Dean's List, Tau Beta Pi
Programming Coursework: OOP and Data Structures, Algorithms, Discrete Structures, Computer Networks and Telecommunication, Introduction to Machine Learning
EE Coursework: Digital Logic, Computer Organization, Circuit Analysis, Microelectronics, Signals and Information

## SKILLS

**Programming**: C/C++, Python, Java, MATLAB, Git/Github, Unix
**Web/Media**: HTML, CSS, JavaScript, Node.js, React.js, Bootstrap
**Machine Learning**: Tensorflow, Google GCP ML, OpenCV, PyTorch, Scikit-learn

## EXPERIENCE

**Uber - Advanced Technologies Group (ATG)**
*Software Systems and Testing Engineering Intern* *June. 2020 – Present.*
- Developing SDV Data Collection Analysis automation tooling.
- Utilizing GraphQL to extract comments from mission specialists during road data collects.
- Implementing Google Sheets API for automated spreadsheet reporting of event hashtags and objects recorded.
- Reduced data analysis time from 4 hours to 10 minutes.
- Tools: Python, GraphQL, Google Sheets API

**University of Toronto - Department of Electrical and Computer Engineering**
*Research Intern* *May. 2019 – Aug. 2019*
- Derived a pseudo-spectral numerical scheme (Split-step Fourier Method) for solving the Coupled Nonlinear Schrödinger Equations.
- Developed a numerical gain solver algorithm for the Four-Wave Mixing (FWM) optical process in semiconductor devices.
- Tools: MATLAB

**York University - Sherman Health Sciences Research Center**
*Research Intern* *May. 2017 – Aug. 2017*
- Developed an Arduino-based foot-mounted inertial navigation device for localization without the use of GPS.
- Developed sensor acquisition and fusion scripts for dead reckoning and state estimation.
- Designed schematics of onboard circuitry for Bluetooth, magnetometer, accelerometer, and gyroscope modules.
- Tools: C/C++, MATLAB

## PERSONAL PROJECTS

**Over-the-Air Deep Learning Based Radio Signal Classification**
*Github Repository* *April. 2020 – May. 2020*
- Developed a convolutional neural network (CNN) classification model for classifying modulation schemes of radio communication signals using PyTorch and Scikit-learn.
- Tuned hyperparameters including learning rate, optimizers, network architecture, L2 regularization, and batch normalization.
- Achieved an overall training accuracy of 92% and a testing accuracy of 45%.

**Autonomous Maze Solving Robot**
*Github Repository* *Sept. 2019 – Dec. 2019*
- Conceptualized, prototyped, and tested an Arduino-based maze solving robot with a team of five engineers.
- Implemented the sensor fusion code and depth-first search finite state machine for maze navigation in C++, utilizing Git/Github for version control with team members.
- Designed and prototyped circuitry for infrared sensors, an RF radio module, and a multiplexer on a protoboard.

**Optical Character Recognition System**
*Github Repository* *Nov. 2019 – Dec. 2019*
- Developed software that annotates and characterizes words in an image using the Google Cloud Platform Vision API and Python.
- Used the OS module to load image files from a specified directory.
- Implemented image annotation functionality (box drawing around detected words) using Pillow, Matplotlib, and Numpy.

## EXTRACURRICULAR ACTIVITIES

**Cornell Association of Computer Science Undergraduates**, *Ithaca, NY*
*General Member* *Sept. 2019 – Present.*
- Attended weekly presentations pertaining to CS and the software industry and engage in networking events.