# Zihao Lin

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## EDUCATION

### CORNELL UNIVERSITY
BS in Electrical and Computer Engineering
May 2022 | Ithaca, NY
CGPA: 4.028 | Dean's List
College of Engineering
Minor in Computer Science

### UNIVERSITY OF TORONTO
BASc in Engineering Science
May 2019 | Toronto, ON
Dean's List (Fall '17 - Winter '19)
Transferred to Cornell University

## COURSEWORK

Digital Signal Processing
Digital Logic & Computer Architecture
Data Structures & Algorithms
Object-Oriented Programming
Intelligent Physical Systems

## SKILLS

### TECHNICAL
Strong:
Python3 • C • JavaScript (ES6)
HTML5/CSS3 • CLI • Git • Autodesk Fusion 360 • SolidWorks • Arduino
MATLAB
Proficient:
C++ • React.js • Bootstrap • Node.js
Socket.io • LaTeX • Tensorflow • OpenCV
Electromechanical Design

## CLUBS

### CORNELL ACSU | General Member
Sept 2019 – Present | Ithaca, NY
Attend weekly presentations pertaining to CS and the software industry and engage in networking events.

### UOFT ROBOSOCCER CLUB | Mechanical Design Engineer
Sept 2017 – May 2019 | Toronto, ON
Utilized CAD (**Autodesk Fusion 360**, **AutoCAD**) and 3D Printing to design and prototype the arm component of a humanoid robot soccer player in preparation for the 2018 RoboCup.

## EXPERIENCE

### UNIVERSITY OF TORONTO - DEPARTMENT OF ECE | Research Intern | Github
May 2019 - August 2019 | Toronto, ON
- Derived a numerical scheme for solving the Nonlinear Schrödinger Equation.
- Wrote a **MATLAB** numerical gain solver for Four-Wave Mixing (FWM) in semiconductor devices.

### NATIONAL UNIVERSITY OF SINGAPORE - DEPARTMENT OF PHYSICS | Research Intern
May 2018 – August 2018 | Singapore
- Developed an optical characterization system for nitrogen-vacancy centers in nanodiamonds through time-resolved photoluminescence spectroscopy.

### UNIVERSITY OF TORONTO - DEPARTMENT OF MIE | Research Intern
May 2017 – August 2017 | Toronto, ON
- Manufactured, characterized, and tested mechanical, thermal, and electrical properties of four configurations of carbon nanotube thin films as electrocatalyst of Zinc-Air batteries.

### YORK UNIVERSITY - SCHOOL OF ENGINEERING | Research Intern | Github
May 2017 – August 2017 | Toronto, ON
- Developed an **Arduino**-based foot-mounted inertial navigation system implementing a zero-velocity update algorithm (ZUPT).
- Utilized **MATLAB**, circuit-design software, and 3D Printing to design, program, and prototype the software and hardware components of the system.

## PROJECTS

### CHATUP | Real-time Chat Application | Github
August 2019 – September 2019 | Ithaca, NY
- Developed a multi-user real-time web chat application with **Node.js** and **Socket.io** as backend.
- Built frontend using **HTML/CSS** and **BootstrapCDN**.

### LANE_DETECTION | Lane Annotation Tool | Github
August 2019 – September 2019 | Ithaca, NY
- Developed a tool that annotates road lanes in videos using **Python**, **OpenCV**, **Matplotlib**, and **Numpy**.

### FACE_DETECT | Real-time Facial Landmark Detection | Github
August 2019 – September 2019 | Ithaca, NY
- Developed a web application that performs facial landmark detection and emotion categorization from the user's video stream.
- Built with **HTML**, **JavaScript**, and **face-api**.

### CHESS ENGINE | An Automated Chess Player | Github
April 2018 – May 2018 | Toronto, ON
- Developed an automated chess player in **Python** that evaluates potential moves using a k-ary tree data structure.