

# Ishaan Thakur

✉ it233@cornell.edu • ☎ +1 (217) 904-9208 • 🌐 ishaanthakur.github.io • 📧 ishaanthakur • 📷 ishaanthakur

## EDUCATION

### Cornell University College of Engineering

Ithaca, NY

*M.Eng., Electrical & Computer Engineering*

Jan. 2021 – Dec. 2021

*B.S., Electrical & Computer Engg; Computer Science Minor | Magna Cum Laude, GPA 3.78*

Grad. Dec. 2020

**Relevant Courses:** Algorithms, Systems Programming (TA), Datacenter Computing, Cloud Computing, Machine Learning, Computer Vision, Operating Systems, Networks, Embedded Systems, Data Structures, Applied Logic

## PROFESSIONAL EXPERIENCE

### SoFi Inc.

Seattle, WA

*Incoming Software Engineering Intern - SoFi Money*

Jun. 2021 – Aug. 2021

### Chiang's Group, Cornell University

Ithaca, NY

*Graduate Researcher + Master's Thesis, Advisor: Prof. Hsiao-Dong Chiang*

Sep. 2020 – Present

- Designed an ensemble of GA, PSO and DE algorithms with a custom CNN for image classification task.
- Validated approach on CIFAR-10 dataset, showing comparable performance to ResNet and DenseNet inspired methods with **5x improved speedups and 80% reduced overhead**.

### On Pepper LLC

New York, NY

*Software Engineering Intern - Voice Experience Team*

May 2020 – Aug. 2020

- Implemented reference BI tool using NLP techniques such as sentence segmentation, POS tagging, dependency parsing and relation extraction, to provide insights on the firm's fund asset data.
- Developed a chatbot using React, DialogFlow and MongoDB that **reduced average response time by 87%**; wrote its unit & integration tests and ran its A/B tests on 1000+ users for recording voice search engagement.
- Redesigned authentication service on the firm's asset management platform to allow integration with Auth0 for all employees and users for more secure requests, using JWT validation on the API gateway.

### ESnet, Lawrence Berkeley National Lab

Berkeley, CA

*Software Engineering Intern - Scientific Network Team*

May 2019 – Aug. 2019

- Built a network packet tracing dashboard capable of collecting service quality metrics, monitoring network security and allowing real time debugging on network packets, using Node.js, React and Cassandra.
- Improved High Touch Services for Network engineers using Node.js and React. **Impact: improved rendering speed by 10x; added support for significant data transfer (100 Gbps) and packet features filtering.**

### Swarm Robotix LLC

Naperville, IL

*Software Engineering Intern - Sensor Software & Controls Team*

May 2018 – Jul. 2018

- Designed a localization system with Dynamic Window Approach for autonomous mobile robots in ROS using C++.
- Successfully improved collision detection and avoidance by 67%.**

## PROJECT HIGHLIGHTS

### Conversation Starter

Nov. 2020 – Dec. 2020

- Developed a chat backend REST API in Java capable of supporting text, image and video messages.
- Leveraged JPA CrudRepository and Hibernate ORM for implementing data persistence in MySQL.

### Waymo Open Dataset Challenge

Apr. 2020 – May 2020

- Trained a modified Cascade R-CNN on 600,000+ images, and improved the mAP scores of vehicles, cyclists and pedestrians by 40%, 25%, and 35% respectively.

### Over-the-Air Radio Signal Classification

Apr. 2020 – May 2020

- Implemented a 6-layer Residual Neural Network in PyTorch to classify time-series data, obtained from measuring signals with low-SNR, into one of 10 modulation types with 60% accuracy. Top 10% Kaggle submission.

### Weather Now!

Dec. 2019

- Developed a RESTful web app in React using OpenWeatherMap API that displays the current weather information of the queried location, storing data with Firebase.

## HONORS & INVOLVEMENT

**Honors:** Dean's List • 2<sup>nd</sup> Place, Cornell Robotics Competition (2019) • 1<sup>st</sup> Place, ECE Design Competition (2018)

**Involvement:** Research Assistant, Autonomous Systems Lab • Research Member, WaggleNet • ECE 3400 (Intelligent Physical Systems) Graduate Teaching Assistant • CS 4414 (Systems Programming) Staff • Outreach, ACSU

## TECHNICAL SKILLS

**Languages:** Proficient: Java, C/C++, Python | Familiar: SQL, JavaScript, HTML, CSS, Go, Verilog, L<sup>A</sup>T<sub>E</sub>X

**Tools + Frameworks:** MongoDB, MySQL, Node.js, React, Express, Data/ML/NLP Python Libraries, Docker, Git