Ishaan Thakur

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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 • 2nd Place, Cornell Robotics Competition (2019) • 1st 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, LaTeX
Tools + Frameworks: MongoDB, MySQL, Node.js, React, Express, Data/ML/NLP Python Libraries, Docker, Git