ISHAAN THAKUR

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EDUCATION

Cornell University **Ithaca, NY**
B.S. in **Electrical & Computer Engineering** w/ Minor in **Computer Science** Aug 2018-Dec 2020

University of Illinois at Urbana-Champaign (Transferred) **Urbana Champaign, IL**
B.S. in **Electrical Engineering** (Edmund J. James Scholar Program) Aug 2017-May 2018
Courses Taken: Analysis of Algorithms, Operating Systems, Intelligent Physical Systems, Embedded Systems, Data Structures, Discrete Math, Competitive Programming, Digital Logic & Comp Organization, Signal Processing
In Progress: Fundamentals of Machine Learning, Digital Signal and Image Processing, Microelectronics
Certifications: Deep Learning Specialization (Coursera), Data Science (Coursera), MEAN Stack Development (Coursera)

PROFESSIONAL EXPERIENCE

Energy Sciences Network (ESnet) **Summer 2019**
Software Engineering Intern - Scientific Network Team *San Francisco, CA*
- Developed and deployed a tool for monitoring and visualizing high-speed network packets received from network adapters.
- Programmed telemetry collector in Golang and setup WebSocket connections for handling 100 Gbps transfer of telemetry data.
- Stored Real-time Network Packet data using InfluxDB (later Apache Cassandra) and monitored packet trends using Grafana.

Autonomous Systems Lab, Cornell University **Sep 2018 – Nov 2018**
Undergraduate Researcher *Ithaca, NY*
- Integrated an Intel Real Sense RTK Depth camera with an iRobot Create2 Platform and wrote a MATLAB interface for receiving beacon information and range estimation over WiFi with an accuracy of 87%.

Swarm Robotix (Nokia Hub 88) **Summer 2018**
Software Engineering Intern - Sensor Software and Controls Team *Nokia Bell Labs, Naperville, IL*
- Managed a team of 5 interns. Worked on Path Planning and Localization for a swarm of four robots using A* Algorithm.
- Wrote Publisher and Subscriber ROS nodes for Lidars and IMU Sensors in C++, Python and published Laser Scans, Point Cloud and Odometry Data to Hector SLAM with an accuracy of 93%.

WaggleNet, UIUC **Mar 2018 – May 2018**
Research Member – Prof. Christopher Schmitz *Champaign, IL*
- Developed a data-logger in Arduino that displays data from various sensors in a mesh network with an accuracy of > 95%.

BioSensors Lab, UIUC **Mar 2018 – May 2018**
Research Assistant – Prof. Viktor Gruev *Champaign, IL*
- Researched and integrated different sensors with GPS in an underwater camera module and refined C++ code improving latency of polarization data obtained at different depths/times of day by 5%.

HexNest, Inc. **Mar 2018 – May 2018**
Head Safety and Optimization Researcher | Founding Member *Urbana, IL*
- Programmed sensors in C++ and developed visualization tools for safety testing of gymnastic mats. Improved Safety by 62%.
- Pitched the product in several startup ventures including iVenture Accelerator Program and Cozad New Venture Competition.

PERSONAL PROJECTS

Space Invaders: Designed a Space Invaders I/O game on an ARM-based Microcontroller board using MBed OS SDK and C/C++. Programmed inter-board connections using I2C and setup UART connections for receiving asynchronous user input.

Smart Alarm Clock: Arduino based Alarm Clock that alerts based on one's Google calendar and Gmail. Used Temboo API to interact with calendar and mail utilities and Firebase for storing data.

Tweet Sentiment Analysis: Used Tweepy API to score user's twitter tweets as positive, negative or neutral and visualized data.

SKILLS & AWARDS

Programming: Proficient: Java, C++, C, Python | Familiar: SQL, X86, MATLAB, HTML/CSS/JavaScript, Verilog

Tools + Frameworks: Cloud (AWS, Firebase, Kafka, Spark); Databases (MongoDB, InfluxDB, MySQL); Web (Node.js, React, P5.js, Web Components); Version Control (Git); Machine Learning (NumPy, PyTorch, Scikit Learn); ISA (ARM, MIPS)

Awards: Dean's List (2017-19); Second Place, Cornell Robotics Competition (2019); First Place, ECE Pulse Design Competition (2018); First Place, Innovation Idea fair, UIUC (2017); Top 5 teams, Northwestern Hackathon (2017)

Involvement: Cornell AppDev (IOS Dev), IEEE, ACSU, ACM, Engineering Open House (Lead Representative-2018)