SAHIL MODI

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EDUCATION

B.S. Computer Science, Minor in Statistics

University of Illinois at Urbana-Champaign

May 2021 | GPA: 3.98/4.00

EXPERIENCE

EarthSense

Computer Vision Intern

Sep 2018 – May 2019, Aug 2019 – Present | Champaign, IL

- Researched computer vision & machine learning algorithms to recognize key plant traits through an autonomous robot platform
- Trained a Convolutional Neural Network on a 90-10 split dataset that classifies lodging of wheat with 80% accuracy
- Deployed a TensorFlow ML model to detect and count plant stems with 96% accuracy
- Proposed additional data collection metrics to address overfitting

Northrop Grumman

Software Engineering Intern

May 2019 – Aug 2019 | Rolling Meadows, IL

- Developed a C# application to configure and test missile warning algorithms and pulled in project schedule by 2 months
- Implemented an algorithm to determine orientation from a set of points with singular value decomposition

Swarm Robotix

Software Engineering Intern

May 2018 – Aug 2018 | Naperville, IL

- Worked in a team of 5 people to design software architecture for an autonomous swarm of robots
- Collaborated with 2 people to create vision algorithms with OpenCV that detected corner castings
- Applied known SLAM algorithms with A* path planning on a TurtleBot for real-time navigation

DASLab

Undergraduate Research Assistant

Jan 2018 – May 2018 | Urbana, IL

- Wrote scripts to automatically update individual robots to the latest software
- Created a user-facing configuration page on Android that sets robot data collection properties

COURSES & SKILLS

- Data Structures, Algorithms, Reinforcement Learning, Computational Photography
- Calculus, Linear Algebra, Discrete Math
- **Languages**: C++, Python, C, C#, Java
- **Frameworks**: OpenCV, TensorFlow, Keras, Android

PROJECTS

HackIllinois Stock Analysis

- A python package that determines sentiment about a company from its tweets using NLTK
- Correlates tweets to stock price and predicts future stock price
- Linear, ridge regression, and a CNN are used for prediction and compared against each other

CU-Recycle

- Developed a Android application to determine if an item is recyclable in the Urbana-Champaign area
- The application contained a neural network that was trained with Keras and TensorFlow Lite
- Major challenges were different lighting, object variety, and recyclability

LEADERSHIP

DGS Leaders

2019 – Present | Representative

- Provided advice to Division of General Studies director on pre-engineering events and information

Engineering Freshmen Council

2017 – 2018 | IT Chair

- Redesigned Engineering Freshmen Council main website
- Helped coordinate Freshmen-Week events

iRobotics MRDC

2017 – 2018 | Software Lead

- Designed and developed the robot's codebase for communication and control.

HONORS & ACHIEVEMENTS

- 2nd place at the Clorox design competition
- CU-Recyle won 2nd place at a Research Park Hackathon (PygHacks)
- James Scholar academic honors
- Tau Beta Pi engineering honors society member