SAHIL MODI

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EDUCATION

B.S. Computer Science, Minor in Statistics **May 2021**
University of Illinois at Urbana-Champaign *GPA: 3.95/4.00*
- Algorithms, Computational Photography, Deep/Machine/Reinforcement Learning

TECHNICAL SKILLS

Languages Python, C++, C, Java, Javascript, Bash
Frameworks PyTorch, OpenCV, TensorFlow

PROFESSIONAL EXPERIENCE

Amazon **Seattle, WA**
Software Development Engineer Intern *May 2020 – Aug 2020*
- Collaborated in a 6 person team to revise frontend asset generation
- Reduced aggregate asset build time by 18.5% and decreased memory usage by 11%
- Analyzed code syntax trees for unfavorable behavior, decreasing final asset size by 5%
- Designed a variant generation algorithm an order of magnitude faster for server built variants and client responsive variants

Distrubuted Autonomous Systems Laboratory **Urbana, IL**
Undergraduate Research Assistant | PI: Dr. Girish Chowdhary *Jan 2020 – May 2020*
- Investigated vision-based robot heading estimation with an unsupervised neural network achieving 72% accuracy
- Devised a supervised network for calculating robot position between rows autonomously with a binary accuracy of 75%
- Augmented video data with homographic transformations to simulate robot variance and increase dataset coverage

EarthSense **Champaign, IL**
Computer Vision Intern *Sep 2019 – Dec 2019*
- Ascertained intrinsic camera matrix of Terrasentia robot cameras
- Achieved 92% accuracy for corn ear height estimation from video by fusing a neural network with camera geometry

Northrop Grumman **Rolling Meadows, IL**
Software Engineering Intern *May 2019 – Aug 2019*
- Developed a C# application to configure and test missile warning algorithms and pulled in project schedule by 2 months
- Implemented an algorithm to calculate orientation from a set of points with singular value decomposition

EarthSense **Champaign, IL**
Computer Vision Intern *Sep 2018 – May 2019*
- Trained a convolutional neural network on a 90-10 split dataset to classify 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

Swarm Robotix **Naperville, IL**
Software Engineering Intern *May 2018 – Aug 2018*
- Collaborated with 2 people to create vision algorithms with OpenCV to detect shipping container corner castings
- Applied known SLAM algorithms with A* path planning on a TurtleBot for real-time navigation

PROJECT HIGHLIGHTS

HackIllinois Stock Analysis
- A python package discovering sentiment about a company from its tweets using NLTK and correlating it with stock price
- Linear, ridge regression, and a CNN are used for prediction and compared against each other

CU-Recycle
- Devised an Android application to report an item's recyclability status in the Urbana-Champaign area
- Trained a convolutional neural network for object recognition with Keras to overcome lighting and object variance

LEADERSHIP

DGS Leaders | Class Representative **2019 – Present**
- Providing advice to Division of General Studies director on pre-engineering events and information
- Serving on engineering student panel for prospective and incoming students

Engineering Freshmen Council | IT Chair **2017 – 2018**
- Redesigned Engineering Freshmen Council website

iRobotics MRDC | Software Lead **2017 – 2018**
- Designed the robot's codebase for communication and control