

SAHIL MODI



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in sahil-modi

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EDUCATION

B.S. Computer Science, Minor in Statistics

University of Illinois at Urbana-Champaign

May 2021

GPA: 3.95/4.00

- Algorithms, Computational Photography, Deep/Machine/Reinforcement Learning
- \$5000 TechnipFMC Scholarship, \$3000 TBP Hayward Scholarship, 2nd place at PygHacks, 2nd place at Clorox design competition

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

- 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

Distributed 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, winning 2nd at PygHacks
- 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