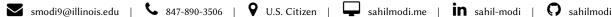
SAHIL MODI















EDUCATION

M.S. Computer Science

May 2022 GPA: 4.00/4.00

University of Illinois at Urbana-Champaign, Thesis Topic: Computer Vision & Deep Learning

B.S. Computer Science, Minor in Statistics

May 2021

University of Illinois at Urbana-Champaign

GPA: 3.96/4.00

Coursework Computational Photography, Computer Vision, Machine & Deep Learning

\$5000 TechnipFMC & \$3000 TBP Hayward Scholarships, 2nd place at PygHacks, 2nd place at Clorox competition **Awards**

TECHNICAL SKILLS

Python, C++, C, Java, Javascript, Typescript, SQL, Bash Languages

Frameworks PyTorch, OpenCV, TensorFlow, Linux, Git

PROFESSIONAL EXPERIENCE

NVIDIA | *Software Engineering Intern, TensorRT*

Santa Clara, CA | May 2021 - Aug 2021

- Introduced a software-based kernel timing heuristic (DLSim) for neural network optimization
- Bridged C++ TensorRT and Python DLSim by implementing a server-client interface handling 10s of queries/s with convolutional layer parameter translation
- Compared 5 networks (ResNet-50, MobileNet, Inception-V4, etc), across 3 batch sizes and FP16, INT8 precision, meeting the <10% throughout reduction goal

Amazon | *Software Development Engineer Intern*

Seattle, WA | May 2020 - Aug 2020

- Reduced aggregate Javascript 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

Jan 2020 - May 2020

Undergraduate Research Assistant | Advisors: Dr. Girish Chowdhary, Dr. Saurabh Gupta

Urbana, IL

- Investigated vision-based robot heading estimation with a self-supervised network on PyTorch achieving 2 degrees error
- Devised a supervised network for autonomously calculate pose and drive a robot with distance to intervention of 30 meters
- · Augmented video data with homographic transformations to simulate robot variance and increase dataset coverage

EarthSense | Computer Vision Research Intern | Advisor: Dr. Girsh Chowdhary

Champaign, IL | Sep 2019 - Dec 2019

- Ascertained intrinsic camera matrices of Terrasentia robot cameras
- Achieved 92% accuracy for corn ear height estimation from video by fusing a neural network with single view metrology

Northrop Grumman | *Software Engineering Intern*

Rolling Meadows, IL | May 2019 - Aug 2019

• Developed a C# application to configure and test missile warning algorithms and pulled in project schedule by 2 months

EarthSense | Computer Vision Intern

Champaign, IL | Sep 2018 - May 2019

- Trained a convolutional neural network with TensorFlow on a biased dataset to classify lodging of wheat with 80% accuracy
- Deployed a **TensorFlow ML** model to detect and count plant stems with 96% accuracy

Swarm Robotix | *Software Engineering Intern*

Naperville, IL | May 2018 - Aug 2018

• Collaborated with 2 people to create vision algorithms with **OpenCV** to detect shipping container corner castings

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 convolutional neural network 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

CS 461: Computer Security | Course Assistant **CS** 374: **Algorithms** | *Course Assistant* **DGS Student Council** | Class Representative **Engineering Freshmen Council** | *IT Chair*

Jan 2021 - May 2021 Aug 2020 - Dec 2020

Aug 2019 - May 2021

Aug 2017 - May 2018

PUBLICATIONS