

# SAHIL MODI

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## EDUCATION

### University of Illinois at Urbana-Champaign

College of Engineering: **Computer Science**

Courses: Discrete Math, Linear Algebra, Data Structures, Computer Architecture

May 2021

GPA | 4.00/4.00

James Scholar Honors

## PROFESSIONAL EXPERIENCE

### EarthSense, Undergraduate Research Assistant

Sep 2018 – Present

Urbana, IL

- Retrained a **CNN** that categorizes the heading of wheat into 3 classes with 90% accuracy
- Trained a **CNN** on a 90-10 split dataset that classifies the lodging of wheat with 80% accuracy
- Created visualizations of different datasets to determine data collection needs

### 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 develop **vision** algorithms with **OpenCV** that detected corner castings
- Researched **Convolutional Neural Networks** to improve vision accuracy
- Implemented **SLAM** with **A\*** path planning for real-time navigation in the environment

### Distributed Autonomous Systems Laboratory, Undergraduate Research Assistant

Jan 2018 – May 2018

Urbana, IL

- Improved a fully-autonomous robotic system that phenotypes a plot of crops (TerraSentia)
- Wrote scripts to automatically update individual robots to the latest software
- Developed a user-facing configuration page on **Android** that sets the data mode of the robot

## PROJECT HIGHLIGHTS

### CU-Recycle | PYGHacks 2018: 2<sup>nd</sup> Place

Determines if an item is recyclable in Urbana-Champaign

- CNN recognizes item in a photo and determines recyclability
- Neural Network was trained on Keras & TensorFlow
- Android App launched on the Play Store

### FaceTunes | Lead Developer

An app that plays a song based on current mood

- Machine learning detects emotions in an image
- Strongest emotion picked to play a song
- Spotify integration with specific mood playlists

## LEADERSHIP DEVELOPMENT

### ACM SIGBot | 2017 – Present

#### Software Team

- Used ROS with vision to recognize game objects
- Researched KCF and other tracking algorithms

### iRobotics MRDC | 2017 – 2018

#### Subsystem Lead, Software Team

- Designed and built the robot's intake system
- Developed code to control various subsystems

### Engineering Freshmen Council | 2017 – 2018

#### IT Chair, 2017 – Present

- Redesigned the EFC main website

## SKILLS

### Proficient

C++, Python, Java, ROS, Android Development

### Intermediate

OpenCV, Keras, Neural Nets, CAD (Autodesk, SolidWorks)

### Beginner

TensorFlow



Play Store: smApps



github.com/sahilmodi



linkedin.com/in/sahil-modi



sahilmodi.me