

Kush Desai

☎ 737-333-0192 | ✉ kushkdesai@utexas.edu | 🏠 kdesai2018.github.io | 📷 kdesai2018 | 📺 kushkdesai

Education

The University of Texas at Austin

B.S. IN ELECTRICAL AND COMPUTER ENGINEERING (DATA SCIENCE AND INFORMATION PROCESSING)

May 2022

GPA: 3.70/4.0

Undergraduate courses: Operating Systems, Algorithms, Probability, Linear Algebra, Software Implementation and Design (Honors), Data Science Principles, Digital Image Processing, Digital Signal Processing

Graduate courses: Cybersecurity Law and Policy, Neural Computation, Digital Video Processing (Audited)

Work Experience

Diligent Robotics

SOFTWARE ENGINEERING INTERN

Feb 2021 - Present

Austin, TX

- Using **Python** and **ROS** to build new features for Moxi, a socially-aware humanoid robot

Facebook

PRODUCTION ENGINEERING INTERN

Summer 2021

New York City, NY (Virtual)

- Using **Rust** and **Buck** to build an end-to-end load testing system for Facebook Live infrastructure that can handle large scale traffic at high QPS
- Used **Scuba**, **ODS** and **Unidash** to build a comprehensive monitoring system with detailed real-time visualization

Socially Intelligent Machines Lab

RESEARCH INTERN

Sept 2018 - Present

University of Texas at Austin

- Researching **audio-augmented Imitation Learning** and implemented **object recognition algorithms** under Dr. Andrea Thomaz
- Conducted Learning from Demonstration robotics experiments using **Python**, **TensorFlow**, **ROS**, **AWS**, **Mechanical Turk** and **Javascript**

BP

SOFTWARE ENGINEERING INTERN

Summer 2020

Chicago, IL (Virtual)

- Designed an **optimal routing algorithm** for shipping to minimize carbon emissions by 30%
- Built a web interface hosted on **Azure** using **Python**, **Flask** and **SQL** while working in an **Agile environment**
- Won **Most Innovative Solution** in the intern hackathon as part of the Net Zero team

Publications

- [1] A. Saran, K. Desai, R. Lioutikov, A. Thomaz, and N. Scott. A case for leveraging human prosody during reward learning. *Workshop, 16th Annual Conference for Basic and Applied Human-Robot Interaction Research*, March 2021.

Projects

3D Rendering from 2D Images

KDESAI2018.GITHUB.IO/NBA-PROJECT

Class Competition Winner

Fall 2020

- Built an end-to-end pipeline using Python, OpenCV and PyTorch to convert videos from NBA games into 3-dimensional pointclouds with pose and object information
- Won best project in **Digital Image Processing** with **Dr. Alan Bovik**

InfoLynx

GITHUB.COM/KDESAI2018/INFOLYNX

HackMIT

2020

- Built an intelligent information panel for YouTube videos using **YouTube API**, **React**, **Python**, **IBM Natural Language Understanding API** and **Google Knowledge Graph**

BEVO - Blind Environment Visualization Objects

BEST USE OF GOOGLE CLOUD, BEST ACCESSIBILITY HACK

TAMUHack

GITHUB.COM/KDESAI2018/BEVO

2020

- Built a palm and object-recognition pipeline to help visually impaired individuals locate objects using audio cues using **Tensorflow**, **Google Cloud**, **Python** and **OpenCV**

ROS Object Recognition

GITHUB.COM/KDESAI2018/ROS-OBJECT-RECOGNITION

Open Source

2019

- Built and finetuned an **open source**, **Robot Operating System** based **real-time object detection** system using **Python**, **PyTorch**, **COCO** and **OpenCV**

Drowsy Driver

1ST OVERALL, BEST IN WORKPLACE SAFETY

GITHUB.COM/KDESAI2018/DROWSY-DRIVER

- Developed an eye and grip tracking system using **OpenCV**, **Python** and **Arduino**
- Contributed this example to the **PyPI open-source face_recognition project** on Github

UT Makeathon

2019

Tracer

DEVPOST.COM/SOFTWARE/TRACER

- Built a game hosted on **AWS** to introduce young programmers to the debugging process using **Javascript** and **PIXI**

HackMIT

2019

BetterKey

DEVPOST.COM/SOFTWARE/BETTERKEY

- Created a **genetic algorithm** in **Java** to create a keyboard layout **customized for the user** that minimizes typo collision by 60% (versus DVORAK) and increases typing speed by 10% (versus QWERTY)

TAMUHack

2019

Honors & Awards

2021 **Scholarship**, Gail and Howard Neal Endowed Scholarship

UT Engineering

2019 **Winner**, BP Scholar

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Extracurriculars

AAAI & HRI

CONFERENCE VOLUNTEER

- Served as a student volunteer at both conferences; assisted conference attendees with navigating the new virtual medium

2021

Virtual

Fretail Hackers

LOGISTICS DIRECTOR

- Handled logistics for SummerHacks 2020, a virtual hackathon with **500+ worldwide attendees** and HackTX 2020, **with 800+ attendees**
- Created the ultimate-hackathon-starter-guide resource to educate and provide resources to hackathon attendees

Jan 2020 - Present

University of Texas at Austin

Skills

Languages Python, Rust, Java, C, C++, JavaScript, MATLAB

Technologies Robot Operating System, AWS, Azure, PyTorch, Tensorflow, OpenCV, sklearn, pandas, Docker, Bash, Arduino, *-nix systems