cduke@gatech.edu
(706) 941-6013

Colby T. Duke

Student in Atlanta, GA
https://colby.codes

Education

Georgia Institute of Technology – Atlanta, GA *August 2019 – May 2023*
Bachelor of Science in Computer Science, GPA 3.91 Faculty Honors, Dean's List, Zell Miller Scholar

Work Experience

Software Engineer Intern **Snap Inc.** *May 2022 – Present*

- Researching in Snap's R&D division, SnapLab, on Spectacles - Snap's next generation wearable smartglasses.
- Designing computer vision models for hand tracking and pose estimation using Spectacles' camera system.
- Generating batches of fully synthetic hand tracking training data to train models without real world images.
- Creating comprehensive cloud-deployed machine learning pipelines for model training and optimizing.

Software Engineer Intern **Uber** *May – August 2021*

- Worked on the Uber Eats Core Pricing team, which was responsible for algorithmically modelling order costs.
- Developed a pricing microservice which calculates delivery fees based on restaurant and customer location.
- Deployed the service into production where it is utilized for every order made by 70 million monthly users.
- Coded the back-end for the service with Go, Python, Hive, and Docstore (Uber's distributed SQL database).

Software Engineer Intern **The Home Depot** *January – May 2021*

- Designed and programmed an ARKit-based iOS app to scan 3D models of customers' furniture with LiDAR.
- Enabled the apps to generate high fidelity mesh scans with ~2cm-wide polygon faces utilizing said apps.
- Merged the models with AR to create virtual visualizations of the customers' furniture and rooms.

Data Science Intern **JANUS Research Group** *June – August 2020*

- Constructed a line of computer vision sensors to monitor meters on water pumps at local farms.
- Integrated the sensors into the Google Cloud Platform, connected via LoRaWAN and cellular data.
- Created a monitoring UI with Django, InfluxDB, and Grafana for the Georgia counties managing the sensors.

Projects & Organizations

CopyCat – Computer Vision and HCI research project which utilizes various pose-estimators (such as MediaPipe, Kinect, and AlphaPose) paired with Hidden Markov Models to translate American Sign Language (ASL) signs to aid deaf children learning ASL. Developed in Dr. Thad Starner's Contextual Computing Group.
Co-authored Publication at 2021 ACM CHI: https://dl.acm.org/doi/abs/10.1145/3411763.3451523

PopSign – Primary project manager of PopSign, an iOS and Android app store-published mobile game which teaches adults ASL on their phones. PopSign is backed and funded by Google's Accessibility Research Team.

GT CS Careers Club – Founder and President of the Georgia Tech Computer Science Careers Club, a registered student organization and online community of over 2,000 GT CS students. The club offers mentorship, resume workshops, mock interviews, technical interview prep, and other career-related services.

Awards

1st Place Paper – ACM CHI Conference 2021, Undergraduate Student Research Competition – May 2021.
Best Overall Presentation – Georgia Tech CoC, Undergraduate Research Symposium – April 2021.

Skills

Languages – *Python, Java, Go / Golang, C++, C, C#, Swift, Bash, x86 Assembly*
Technologies – *TensorFlow, OpenCV, MediaPipe, Django, InfluxDB, SQL, Apache Hive, Docker, GCP, GitHub*
Concepts – *Machine Learning, Computer Vision, Pose Estimation, Microservice Architecture, Distributed Systems, Scalable Containerization, Human Computer Interaction, Augmented Reality, Agile Development*