Dhruva Bansal

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EDUCATION

Stanford University | Stanford, CA September 2021-June 2023
Master of Science in Computer Science, Concentration: Artificial Intelligence

Georgia Institute of Technology | Atlanta, GA August 2018-May 2021
Bachelor of Science in Computer Science, GPA 3.97/4.0
Courses: Imitation Robot Learning, Deep Learning, Machine Learning, Artificial Intelligence, Computer Vision, Algorithms

PROFESSIONAL EXPERIENCE

Amazon Robotics | Boston, MA | *Software Development Engineer Intern* May 2021-August 2021
Software Development Engineer (SDE) Intern on the Perception and Human Interface (PHI) team.

Honeywell Inc. | Atlanta, GA | *Software Engineer Intern* May 2019-July 2019
- Built a web app to extract relational data from scanned documents using Python, TensorFlow, and OpenCV
- Built upon existing APIs for expanding analysis of industrial data using Node.js and MongoDB
- Wrote production ready code with 95% test coverage to handle over 3 million requests every month

Emotion Robotics | Sugar Land, TX | *Software Engineer Intern* September 2017-June 2018
- Built an autonomous UAV from scratch using Python, OpenCV, and MAVLink.

RESEARCH EXPERIENCE

Georgia Tech RAIL | Atlanta, GA | *Undergraduate Researcher* January 2020-May 2021
- Paper on learning instance-level n-ary semantic knowledge for service robots published at RSS'21
- Paper titled "Anticipatory Human-Robot Collaboration via Multi-Objective Trajectory Optimization" published at IROS'20
- Implemented Transformers in PyTorch for commonsense reasoning, outperforming baselines by 11% on search accuracy
- Predicted human motion using Gaussian Mixture Models for trajectory optimization in Python and ROS

Georgia Tech CCG | Atlanta, GA |*Undergraduate Researcher* August 2018-May 2021
- Paper "CopyCat: Using Sign Language Recognition to Help Deaf Children Acquire Language Skills" published at CHI'21
- Recognized American Sign Language using HMMs, Transformers, and 2D hand tracking in Python and PyTorch
- Demonstrated that HMMs outperform Transformers for ASL recognition by 17% in user-independent settings
- Received the President's Undergraduate Research Award from Georgia Tech for ASL recognition efforts

Georgia Tech UBICOMP | Atlanta, GA |*Undergraduate Researcher* August 2018-May 2019
- Published "Surface++: A Scalable and Self-sustainable Wireless Sound Sensing Surface" at MobiSys'19. Patent Pending.
- Fabricated a self-sustainable sound surface and performed speech quality analysis using Python and Keras.

PROJECT EXPERIENCE

Learning from Suboptimal Demonstrations | *Georgia Tech* March 2021-May 2021
- Developed a novel semi-supervised algorithm for directly learning from partially labeled suboptimal demonstrations
- Leveraged Transformers to classify states as suboptimal and inverse reinforcement learning to learn policy

Confident Machine Translation | *Facebook AI Research* April 2020-August 2020
- Developed a Confident Machine Translator using Pytorch in collaboration with Facebook AI Research
- Leveraged language models to classify translations 10% more accurately than baselines

Georgia Tech Aerial Robotics | *Autonomous Drone Competition* July 2019-February 2020
- Implemented pathfinding and obstacle recognition for drones in Python using OpenCV and ROS

RoboRacing | *RoboJackets* January 2019-May 2019
- Implemented an autonomous PD controller based upon path planning in Python and ROS

SKILLS

Python, PyTorch, Java, C++, TensorFlow, Git, OpenCV, Keras, ROS, MatLab, C#, JavaScript, Node.js, Bash, Django, MongoDB, Docker, Unity

AWARDS

CHI Student Research Competition Winner (2021), Outstanding Undergraduate Research Award (2021), President's Undergraduate Research Award (2021), Dean's List and Faculty Honors, MobiSys Best Poster (2019), HackGT 5 - Best Accessibility Hack (2019)