Karthik Dharmarajan

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Education

Stanford University **Sept. 2024 – June 2026**
Master of Science in Computer Science (Artificial Intelligence Concentration) *Stanford, CA*

University of California, Berkeley **Aug. 2020 – May 2024**
Bachelor of Science in Electrical Engineering and Computer Sciences *Berkeley, CA*
GPA 3.95

Experience

Stanford Vision and Learning Lab **September 2024 – Present**
Graduate Research Assistant *Stanford, CA*
- Ideated and implemented a method for zero-shot robot manipulation from generated videos by extracting 3D object flow

Databricks **May 2024 – August 2024**
Software Engineering Intern *Mountain View, CA*
- Implemented a lightweight and async internal API for Databricks products to report resource usage for quota visibility
- Integrated the quota management system with 3 products, resulting in 10,000+ quota usage reports a day

AUTOLab **August 2021 – May 2024**
Undergraduate Research Assistant *Berkeley, CA*
- Published 12 papers (5 first author) in top robotics conferences such as RSS, CoRL, ICRA, IROS
- Finetuned a more robust robotics vision-language-action model to camera perturbations by 80% with novel view synthesis
- Created a zero-shot cross-embodiment policy transfer method for robots with less than 20% performance degradation
- Devised sim2real methods for surgical robot policy transfer and U-Net needle segmentation model training
- Developed method for autonomously inserting shunts into blood vessels with a 90% success rate
- Evaluated digital twin under 1-100s+ latencies and 10-25% packet loss, resulting in a transfer success rate of 86%

Databricks **May 2023 – August 2023**
Software Engineering Intern *San Francisco, CA*
- Integrated dynamic load balancing into webapp microservice for addressing issues presented in severe outages impacting 100+ enterprise customers
- Documented 7 API rate limits of critical endpoints

Amazon Web Services **September 2022 – December 2022**
Software Development Engineering Intern *Remote*
- Developed a business intelligence pipeline for understanding AWS Glue Data Catalog usage on a per customer basis
- Deployed AWS Lambdas for extracting metrics from 10,000,000+ API calls a day across 25+ regions

Roblox **May 2022 – August 2022**
Software Engineering Intern *San Mateo, CA*
- Spearheaded development of Python tool that audits 1000+ sets of AWS firewall rules for network security
- Developed intuitive dashboard in Kibana to visualize 10000+ audit records stored in Elasticsearch
- Implemented program that examines network security of 10000+ AWS EC2 instances across 59+ accounts in a SIEM

Projects

Skydentity | *Python, GCP, Azure* **July 2023 – May 2024**
- Implemented the Azure part of Skydentity, a system enforcing security policies for multi-cloud workloads
- Created a security policy language for precisely defining access to cloud resources

Technical Skills

Languages: Python, C/C++, Java, Scala, JavaScript, HTML/CSS
Frameworks/Technologies: AWS, ROS, ROS2
Developer Tools: Git, Docker, Cursor, Confluence, Jira
Libraries: Pytorch, Numpy, Matplotlib, OpenCV