Karthik Dharmarajan

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Education

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

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

Experience

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 - University of California, Berkeley   **August 2021 – May 2024**
Undergraduate Research Assistant   *Berkeley, CA*
- Published 12 papers in top robotics conferences such as RSS, CoRL, ICRA, IROS
- Trained a robotic foundation model more robust to camera perturbations by 80% with novel view synthesis diffusion
- 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
- Implemented method of sending actions and receiving camera images over SSH for assisting robot fleet learning
- 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 – Present**
- 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

Shipmate | *Go, Docker, AWS*   **May 2022 – May 2023**
- Architected entire backend system for a yacht service lookup app in AWS using microservices
- Deployed Golang microservices with Github actions, Docker containers, and ECS, reducing commands by 40%
- Secured backend by giving least privilege access for resources using AWS IAM policies, VPC ACLs, and security groups
- Implemented user accounts with AWS Cognito for authentication, S3, DynamoDB for information persistence

Technical Skills

Languages: Java, Python, C/C++, Go, Scala, JavaScript, HTML/CSS
Frameworks/Technologies: AWS, Elasticsearch, Kentik, Lacework, NetBox, ROS, ROS2, Node.js, React, MongoDB
Developer Tools: Git, Docker, VS Code, Confluence, Jira
Libraries: Pytorch, Numpy, Matplotlib, OpenCV