Karthik Dharmarajan

CONTACT
INFORMATION

kdharmarajan@berkeley.edu
kdharmarajan.com
1-951-370-0056

EDUCATION

Stanford University
M.S. Computer Science   **September 2024 - June 2026**

University of California, Berkeley
B.S. Electrical Engineering and Computer Sciences   **August 2020 - May 2024**

G.P.A.: 3.95/4.00

Coursework Highlights: Deep Reinforcement Learning, Deep Learning, Operating Systems, Computer Security, Secure Systems from Decentralized Trust, Machine Learning, Database Systems, Robotics, Computer Vision, Optimization Models in Engineering, Probability and Random Processes, Efficient Algorithms and Intractable Problems

SUBMITTED
PUBLICATIONS

13. Samyukta Yagati, Alec Li, **Karthik Dharmarajan**, Sam Kumar, Romil Bhardwaj, Raluca Ada Popa, Malte Schwarzkopf, Ion Stoica. CloudGate: Enforcing Least-Privilege over Third-Party Cloud Orchestrators.

ACCEPTED
PUBLICATIONS

12. Lawrence Yunliang Chen*, Chenfeng Xu*, **Karthik Dharmarajan**, Zubair Irshad, Richard Cheng, Kurt Keutzer, Masayoshi Tomizuka, Quan Vuong, Ken Goldberg. RoVi-Aug: Robot and Viewpoint Augmentation for Cross-Embodiment Robot Learning. *Conference on Robot Learning (CoRL)*. Munich, Germany. November, 2024. **Oral Presentation**

11. Zachary Tam, **Karthik Dharmarajan**, Tianshuang Qiu, Yahav Avigal, Jeffrey Ichnowski, Ken Goldberg. BOMP: Bin-Optimized Motion Planning. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Abu Dhabi, United Arab Emirates. October, 2024.

10. Lawrence Yunliang Chen*, Kush Hari*, **Karthik Dharmarajan***, Chenfeng Xu, Quan Vuong, Ken Goldberg. Mirage: Cross-Embodiment Zero-Shot Policy Transfer with Cross-Painting. *Robotics: Science and Systems (RSS)*. Delft, Netherlands. July, 2024.

9. Kush Hari, Hansoul Kim, Will Panitch, Kishore Srinivas, Vincent Schorp, **Karthik Dharmarajan**, Shreya Ganti, Tara Sadjadpour, Ken Goldberg. STITCH: Augmented Dexterity for Suture Throws Including Thread Coordination and Handoffs. *IEEE International Symposium on Medical Robotics (ISMR)*. Atlanta, Georgia. June, 2024. **Best Paper Finalist**

8. Qinxi Yu*, Masoud Moghani*, **Karthik Dharmarajan**, Vincent Schorp, Will Panitch, Jingzhou Liu, Kush Hari, Huang Huang, Mayank Mittal, Ken Goldberg, Animesh Garg. ORBIT-Surgical: An Open-Simulation Framework for Learning Surgical Augmented Dexterity. *IEEE International Conference on Intelligent Robots and Systems (ICRA)*. Yokohama, Japan. May, 2024.

7. **Karthik Dharmarajan**, Will Panitch, Baiyu Shi, Huang Huang, Lawrence Yunliang Chen, Masoud Moghani, Qinxi Yu, Kush Hari, Thomas Low, Danyal Fer, Animesh Garg, Ken Goldberg. Robot-Assisted Vascular Shunt Insertion with the dVRK Surgical Robot. *Journal of Medical Robotics Research (JMRR)*, vol. 8, no. 03n04, 2024.

6. Kaiyuan Chen, Ryan Hoque, **Karthik Dharmarajan**, Edith LLontop, Simeon Adebola, Jeffrey Ichnowski, John Kubiatowicz, Ken Goldberg. FogROS2-SGC: A ROS2 Cloud Robotics Platform for Secure Global Connectivity. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. Detroit, United States of America. October, 2023.

5. Jeffrey Ichnowski, Kaiyuan Chen, **Karthik Dharmarajan**, Simeon Adebola, Michael Danielczuk, Vıctor Mayoral-Vilches, Hugo Zhan, Derek Xu, Ramtin Ghassemi, John Kubiatowicz, Ion Stoica, Joseph Gonzalez, Ken Goldberg. FogROS2: An Adaptive Platform for Cloud and Fog Robotics Using ROS 2. *IEEE International Conference on Robotics and Automation (ICRA)*. London, United Kingdom. May, 2023.

4. **Karthik Dharmarajan***, Will Panitch*, Muyan Jiang, Kishore Srinivas, Baiyu Shi, Yahav Avigal, Huang Huang, Thomas Low, Danyal Fer, Ken Goldberg. Automating Vascular Shunt Insertion with the dVRK Surgical Robot. *IEEE International Conference on Robotics and Automation (ICRA)*. London, United Kingdom. May, 2023.

3. **Karthik Dharmarajan***, Will Panitch*, Baiyu Shi, Huang Huang, Lawrence Yunliang Chen, Thomas Low, Danyal Fer, Ken Goldberg. A Trimodal Framework for Robot-Assisted Vascular Shunt Insertion When a Supervising Surgeon is Local, Remote, or Unavailable. *IEEE International Symposium on Medical Robotics (ISMR)*. Atlanta, United States of America. April, 2023.

2. Ryan Hoque, Lawrence Yunliang Chen, Satvik Sharma, **Karthik Dharmarajan**, Brijen Thananjeyan, Pieter Abbeel, Ken Goldberg. Fleet-DAgger: Interactive Robot Fleet Learning with Scalable Human Supervision. *Conference on Robot Learning (CoRL)*. Auckland, New Zealand. December, 2022. **Oral Presentation, top 6.5%**

1. Sophea Bonne*, Will Panitch*, **Karthik Dharmarajan***, Kishore Srinivas*, Jerri-Lynn Kincade, Thomas Low, Bruce Knoth, Cregg Cowan, Danyal Fer, Brijen Thananjeyan, Justin Kerr, Jeffrey Ichnowski, Ken Goldberg. A Digital Twin Framework for Telesurgery in the Presence of Varying Network Quality of Service. *IEEE International Conference on Automation Science and Engineering (CASE)*. Mexico City, Mexico. August, 2022.

EXPERIENCE

Software Engineering Intern   May 2024 – Present
Databricks   *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.

Undergraduate Research Assistant   August 2021 – June 2024
AUTOLab - University of California Berkeley   *Berkeley, CA*

Advised by Professor Ken Goldberg. Worked on various projects in surgical robotics, cloud robotics, motion planning, and simulators, leading to 9 publications and 2 under review.

Undergraduate Research Assistant   July 2023 – June 2024
SkyLab - University of California Berkeley   *Berkeley, CA*

Advised by Professors Raluca Ada Popa and Ion Stoica. Implementing a multi-cloud security layer for high compute workloads. Designed a security policy language for enforcing authorization for workload orchestrators.

Software Engineering Intern   May 2023 – August 2023
Databricks   *San Francisco, CA*

Designed and prototyped the integration of a dynamic load balancer into a business critical stateful service. Documented 7 API rate limits of critical endpoints.

Software Development Engineering Intern   September 2022 – December 2022
Amazon Web Services

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.

Software Engineering Intern   **May 2022 – August 2022**
Roblox   *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.

PROFESSIONAL SERVICE

Reviewer

IEEE Robotics and Automation Letters	2022, 2023
IEEE/RSJ Conference on Intelligent Robots and Systems	2024

AWARDS

NSF Graduate Research Fellowship Program Honorable Mention	2024
Eta Kappa Nu EECS Honors Society	2021
Eagle Scout	2017

SKILLS

Languages: Python, C++, Java, Scala, Go, Javascript, HTML/CSS
Frameworks and Technologies: OpenCV, Pytorch, Numpy, AWS, Azure, Elasticsearch, ROS1/2, React, MongoDB, Spark