

Vedant Gupta

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EDUCATION

Brown University - Sc.B. Computer Science and Mathematics (Honors)

Providence, RI | Sept 2021 – May 2025

GPA: 4.0/4.0

Honors: Magna Cum Laude (highest offered), Computer Science Departmental Honors, Sigma Xi

Key Coursework: Reintegrating AI*, Learning & Sequential Decision Making*, Applications of Probability and Stats*, Formal Proof & Verification, ML, Computer Systems, Cognitive Computational Neuroscience, Honors Statistics (* graduate level course).

INDUSTRY EXPERIENCE

Asari AI, *Founding Member of Technical Staff*

San Francisco, CA | May 2025-

- Building core infrastructure and performing applied research to build reliable AI agents that perform systems-level reasoning.
- Working in a small team of 7 engineers. Investments from Eric Schmidt, Jeff Dean, Caltech, etc.

Boston Dynamics - The AI Institute, *Robotics Intern*

Cambridge, MA | May 2023 – Aug 2023

- Collaborated to develop an interactive tour guide using the Boston Dynamics Spot robot, integrating natural language processing and emotional body movements. The robot takes users to various indoor locations based on inferred user interests.
- Contributed to the company ROS 2 codebase and implemented components for perception, planning, and navigation. *Used Python, ROS 2.*

RESEARCH PUBLICATIONS

Machine Learning & Robotics (*at the Intelligent Robot Lab, advised by Prof. George Konidaris*)

Core objective: Make robots generalize better to out-of-distribution tasks

- **Learning Parameterized Skills from Demonstrations.** V. Gupta, H. Fu, C. Luo, Y. Jiang, G. Konidaris. *Neural Information Processing Systems (NeurIPS)* 2025
- **Robot Task Planning under Local Observability.** M. Merlin, S. Parr, N. Parikh, S. Orozco, V. Gupta, E. Rosen, G. Konidaris. *IEEE International Conference on Robotics and Automation (ICRA)* 2024.
- **Synthesizing Navigation Abstractions for Planning with Portable Manipulation Skills.** E. Rosen, S. James, S. Orozco, V. Gupta, M. Merlin, S. Tellex, G. Konidaris. *Conference on Robot Learning (CoRL)* 2023.

Theoretical Computer Science, Algorithmic Complexity (*with Prof. Lorenzo De Stefani*)

Core objective: Optimise dynamic programming algorithms to run faster on hierarchical memory systems.

- **On the I/O Complexity of the CYK Algorithm and of a Family of Related DP Algorithms.** L. De Stefani and V. Gupta (equal contribution). *Algorithms and Data Structures Symposium (WADS)* 2025.

PROJECTS

- **TinyLM:** Implementation of causal decoder transformers to **train small language models**. *Used Python and Pytorch.*
- **Formalized the Kochen-Specker paradox using Lean 4 and Mathlib;** Mathlib contributor.
- Designed approaches to **learn temporally extended skills** in the Option Critic Framework in a multitask setting by preventing option-collapse. *Used Python & PyTorch.*
- Conducted a **comparative performance analysis** of reinforcement learning algorithms (Dreamer V3, PlaNet, & PPO) in tasks involving deformable objects such as liquids or clay. *Used Python & PyTorch.*
- **K9db:** Helped develop an open-source **MySQL-compatible database system** for GDPR compliance by construction. Halved memory overheads. **Published at OSDI '23.** *Used C++*

SKILLS & INTERESTS

- **Proficient in Python, PyTorch.** Experience in Lean, ROS 2, C++, Racket, JavaScript, MySQL. **Cloud infrastructure experience with AWS and GCP** (cluster setup and workload management).
- **Captain of Brown Men's Squash for 2024-25.** Most Valuable Player (Brown), 2024-25. Most Improved Player (Brown), 2022-23. Playing team member since 2021. National Team Championship - Chaffee Cup winner in 2023, 2024, 2025.