

Rohit Dwivedula

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RESEARCH INTERESTS

ML for Systems, AI Infrastructure, Operating Systems.

EDUCATION

University of Texas at Austin <i>PhD Computer Science.</i> Advised by Aditya Akella and Daehyeok Kim . Amazon AI PhD Fellowship (2025-27; \$70,000/year award + \$100k in AWS credits)	2023 – present <i>Austin, TX</i>
Birla Institute of Technology and Science (BITS), Pilani <i>Bachelor's in Computer Science & Minor in Physics. (GPA: 9.10/10)</i>	2017 – 21 <i>Hyderabad, India</i>

WORK EXPERIENCE

Google Cloud <i>Software Engineer Intern</i> - Developed a framework to synthesize compact, self-contained CPU benchmarks representative of large-scale Google production workloads, enabling performance evaluation without running complex production software stacks. - Designed algorithms to reconstruct representative executable workloads from production profiles, matching basic-block execution frequencies, branch probabilities, and hardware performance-counter metrics. - Built agent-driven optimization loops using AlphaEvolve to iteratively refine synthesized workloads.	May 2026 – Aug 2026 <i>Sunnyvale, CA</i>
AMD Research <i>R&D Intern</i> - Developed an analytical simulator to model network usage (e.g., latency, bandwidth) of modern deep learning workloads such as LLMs and state space models on large-scale AMD GPU clusters. - Enabled Chakra trace collection on AMD hardware, allowing for cross-platform compatibility (e.g. with Nvidia). - Designed algorithms to enable efficient multi-tenant training and inference of LoRA-finetuned models.	May 2024 – Aug 2024 <i>Austin, TX</i>
Microsoft Research <i>Research Fellow</i> - Worked in the AI Infrastructure team on making deep neural network (DNN) training and inference more efficient. - Analyzed GPU usage patterns of hundreds of internal DNN jobs, pinpointing models underutilizing GPUs. <u>Other tasks</u>: LM distillation; LM benchmarking; debug failures on-call during LLM (50B+ params) training; experimenting with modifications to existing neural architectures; optimizing mixture-of-expert training	Aug 2021 – Aug 2023 <i>Bengaluru, India</i>
Microsoft Research <i>Research Intern</i> - Designed and built <i>TrustRate</i>, a privacy-preserving polling system using multiple cryptographic primitives. [paper] - Implemented the cryptographic primitives in C++, built an E2E prototype, and benchmarked it on a testbed of 2200 nodes on Azure spread across three WAN regions. Achieved a throughput of > 4.5 million votes per day.	Jan 2021 – Jul 2021 <i>Bengaluru, India</i>

TECHNICAL SKILLS

C++, Python, C, CUDA C++, Bash, SQL; PyTorch, ROS; perf/PMU counters, NVIDIA Nsight, GDB, eBPF, Docker, network simulators (e.g. mahimahi, ns3). [\[GitHub\]](#)

SELECTED PUBLICATIONS [[Google Scholar](#)]

* *equal contribution*

- **Rohit Dwivedula**, Divyanshu Saxena, Sujay Yadalam, Eric Hayden Campbell, Daehyeok Kim, Aditya Akella. [Vulcan: Instance-specialized, Verifiable Systems Heuristics Through LLM-driven Search](#). Preprint (under submission) 2026..
- **Rohit Dwivedula**, Sadanand Modak, Aditya Akella, Joydeep Biswas, Daehyeok Kim, Christopher J. Rossbach. [ConfigBot: Adaptive Resource Allocation for Robot Applications in Dynamic Environments](#). IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2025).
- **Rohit Dwivedula**, Divyanshu Saxena, Aditya Akella, Swarat Chaudhuri, Daehyeok Kim. [PolicySmith: Man-Made Heuristics Are Dead. Long Live Code Generators!](#) Hot Topics in Networks (HotNets 2025).
- Divyanshu Saxena, Jiayi Chen, Sujay Yadalam, Yeonju Ro, **Rohit Dwivedula**, Eric H Campbell, Aditya Akella, Christopher J Rossbach, Michael Swift. [How I learned to stop worrying and love learned OS policies](#). Proceedings of the 2025 Workshop on Hot Topics in Operating Systems (HotOS 2025).
- Chenxi Yang, Divyanshu Saxena*, **Rohit Dwivedula***, Kshiteej Mahajan, Swarat Chaudhuri, Aditya Akella. [Canopy: Learning Congestion Controllers with Formal Certificates](#). European Conference on Computer Systems (EuroSys 2026).
- **Rohit Dwivedula**, Sriram Sridhar, Sambhav Satija, Muthian Sivathanu, Nishanth Chandran, Divya Gupta, Satya Lokam. [TrustRate: A Decentralized Platform for Hijack-Resistant Anonymous Reviews](#). Poster at The 24th Privacy Enhancing Technologies Symposium (2024).

PATENT

- *Multi-tenant Training and Inference for Fine-tuned Artificial Intelligence (AI) Models*. Bradford M. Beckmann, Kishore Punniyamurthy, Rohit Dwivedula. Assigned to Advanced Micro Devices, Inc. Filed with USPTO (Apr 2025).

HONORS & AWARDS

- o Dean’s Prestigious Fellowship Supplement, UT Austin 2025, 2026
- o Professional Development Award, UT Austin 2024, 2025
- o PETS 2024 Travel Grant 2024
- o BITS Pilani V.S. Rao Award for all-round excellence in research, leadership and volunteering 2021
- o BITS Pilani Merit Scholarship to top 3% of students 2018

PROFESSIONAL SERVICE

- o *Reviewer*, MLArchSys @ ISCA 2026
- o *Artifact Evaluation Committee*: OSDI, MobiSys, ASPLOS 2026
- o *Graduate Representative Association of Computer Sciences*, UT Austin 2024 – 2026
- o *Graduate Admissions Student Committee*, UT Austin 2024

OTHER EXPERIENCE

- o *Coordinator*, Placement Unit, BITS Pilani. Headed a team of ~80 volunteers. 2020-21
- o *Teaching Assistant*, BITS Pilani: Data Structures & Algorithms; Software Eng.; Computer Programming 2018–21
- o *Volunteer Research Intern*, Central Electronics Engineering Research Institute, Chennai Summer 2019