

Saarth Deshpande

saarth.xyz

EDUCATION

The University of Texas at Austin <i>Doctor of Philosophy in Computer Science</i> Advisors: Venkat Arun and Neeraja Yadwadkar	Aug 2024 - Present
University of California, San Diego <i>Master of Science in Computer Science</i>	Sep 2022 - Mar 2024 GPA: 3.88/4.0
Pune Institute of Computer Technology <i>Bachelor of Engineering in Information Technology</i>	Aug 2018 - Jul 2022 GPA: 9.74/10.0

RESEARCH EXPERIENCE

Accelerating Datacenter Applications with Emerging Hardware Accelerators	Feb 2023 - Jun 2023
<ul style="list-style-type: none">• Advisor: Amy Ousterhout• Offloaded datacenter tax to a Mellanox ConnectX-5 SmartNIC to better utilize CPU cycles.• Resulted in a 3.5x boost in throughput, and a 20% reduction in latency for a synthetic web service application.	

INDUSTRY EXPERIENCE

Amazon DynamoDB <i>Software Development Engineer Intern</i> Worked on the DynamoDB Storage Engine team to create a new storage engine using the FAISS (Facebook AI Similarity Search) library. Wrote production C++ code using POSIX threads, CMake, and gdb.	May 2024 – Aug 2024
Amazon Music <i>Software Development Engineer Intern</i> Worked on the Payments team to introduce pessimistic fulfillment (payment authorization before activating benefits) for high-risk Amazon Music Unlimited (AMU) customers, to reduce bad debt and mitigate fraud.	Jun 2023 – Sep 2023
Ethereum Push Notification Service <i>Software Developer Intern</i> Set up CI/CD for PUSH nodes using GitHub actions, Docker, and an AWS Elastic Beanstalk pipeline.	Jan 2022 – Apr 2022
SudoLMS <i>Founder</i> Created a college LMS platform including a web-based terminal, for graders to execute students' assignments without downloading locally. 600+ active users at one point in time.	Sep 2020 – Mar 2021
DataOrc <i>Software Engineer Intern</i> Set up the complete DevOps pipeline for real-time big data analytics using AWS Lambda, Athena, SQS, S3, and DynamoDB with React, Metabase, Flask, and boto3.	Sep 2020 – Mar 2021
LTI - Larsen & Toubro Infotech <i>Machine Learning Engineer Intern</i> Worked on Named Entity Recognition models and Transfer Learning using Facebook's fastText word embeddings for text classification and data augmentation along with TensorFlow and Keras.	Dec 2019 – Jan 2020

TEACHING EXPERIENCE

University of California, San Diego <i>Graduate Teaching Assistant</i> <ul style="list-style-type: none">• WES 269 - Co-design of Hardware and Software taught by Prof. John Eldon.• CSE 221 - Graduate Operating Systems taught by Prof. Yuanyuan Zhou.	Winter 2024 Fall 2023
Indian Institute of Technology, Bombay <i>FOSSEE Summer Fellow</i> Created educational materials like lecture notes and animations to enhance the visual comprehension of topics in Advanced Mathematics, with a particular focus on the Geometry of Planes and Curves.	Apr 2020 – Jul 2020

PUBLICATIONS

- [1] Anil Yelam, Stewart Grant, **Saarth Deshpande**, Nadav Amit, Radhika Niranjana Mysore, Amy Ousterhout, Marcos K. Aguilera, Alex Snoeren. Eden: Developer-Friendly App-Integrated Far Memory. In *Proceedings of the 22nd USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2025*.

AWARDS

Student Scholarship | *ACM SIGOPS Symposium on Operating Systems Principles (SOSP)* Oct 2024
Received a student scholarship towards registration and travel for SOSP 2024 at Austin, TX.

Department Rank 1 | *Pune Institute of Computer Technology* Sep 2022
Ranked 1st among 250+ students in the Department of Information Technology for academics during junior year of undergraduate study.

Impetus & Concepts (InC) 2022 | *Pune Institute of Computer Technology* Mar 2022
Our undergraduate senior-year project, Distributed Caching over a Local Network, was inspired by Prof. David Patterson's 1994 paper on Cooperative Caching. We were awarded the First Prize in Communication Networks and Second Prize in Open Software categories.