Kaushik Varadharajan

kaushik.r.varadharajan@gmail.com ⋄ Fremont, CA
linkedin.com/in/kaushikrv ⋄ github.com/kaushik327

EDUCATION

University of Illinois Urbana-Champaign, B.S. Computer Science and Linguistics *Aug 2022 - Dec 2024*
4.0/4.0 GPA, LAS Honors James Scholar, Dean's List
Coursework: Compiler Construction, Distributed Systems, Applied Machine Learning, Systems Programming, Honors Computer Architecture, Intro Algorithms, Database Systems, Data Structures, Computational Linguistics

EXPERIENCE

Arm San Jose, CA
Machine Learning Software Engineer Intern *May 2024 - Aug 2024*
· Contributed to the Tensor Operator Set Architecture (TOSA), a minimal but expressive intermediate representation for precise compilers from machine-learning frameworks (PyTorch, TensorFlow) to diverse targets
· Refined the TOSA MLIR graph compiler with new operators and passes to better support state-of-the-art models
· Wrote Python bindings with Pybind for TOSA's open-source C++ reference model, so operators can be directly run for testing
· Tested serialization of operator graphs and quantized datatypes with Google's FlatBuffers library in C++ and Python
· Used Git, Gerrit, and Jenkins for code review, intellectual-property review, and CI/CD at scale

ADAPT Group Urbana, IL
Research Assistant *Dec 2023 - present*
· Working on Dias, a dynamic just-in-time rewriter for Pandas code in Jupyter using syntax tree pattern-matching
· Investigating the use of syntax tree matching and formal methods to reduce reliance on LLMs in automatic code-writing tools

SwiftCX Remote
Software Engineer Intern *May 2023 - Oct 2023*
· Finetuned MosaicML's MPT-7B for customer service on 30K support emails using Huggingface, PyTorch, and Postgres
· Created FastAPI backend for agent insights dashboard, collecting browsing data from S3 and Redis and processing with Pandas
· Used GPT-4 for text-to-SQL and intent detection, building a SolidJS/WebSocket app for natural-language database queries
· Implemented Redis cache to speed up ETL data transfer from Zendesk to AWS S3 data lake for 20 companies

LEADERSHIP

CS 374: Intro Algorithms and Models of Computation Urbana, IL
Course Assistant *Jan 2024 - present*
· Holding weekly office hours, grading assignments, and moderating online forums like Discord and EdStem
· Creating extra slides and practice questions for new student-led midterm review sessions

ACM @ UIUC Urbana, IL
Infrastructure Co-Chair *May 2024 - present*
· Managing engineering teams for UIUC's largest computer science student organization

Infrastructure Team Lead *Sep 2023 - May 2024*
· Developed serverless CRUD API using AWS Lambda, Azure AD, and DynamoDB to manage role-based access control

PROJECTS

CarScope — HackIllinois 2024 General Track Finalist | *Huggingface, Flutter*
Built mobile app to identify cars using image classification model and answer questions using locally-hosted language model

FPGA "Dinosaur Game" (group project) | *Verilog*
Programmed a simple runner video game for Basys 3 FPGA, using Verilog to interface with VGA monitor

SKILLS

Languages Python, C, C++, Rust, SQL, Java, Javascript, Verilog, OCaml, Scheme
Other Git, AWS, Docker, Jenkins, Gerrit, PostgreSQL, MySQL, MongoDB, Neo4J, Django, Firebase

AWS Certified Cloud Practitioner