Rishika Varma Kalidindi
Email | Website | LinkedIn

University of Michigan, Ann Arbor	*Indian Institute of Technology Madras*
Ex-Research Engineer at NUS	*Ex-Software Engineer at Google*

Education

University of Michigan, Ann Arbor   *Aug '24 - May '26*
MS in Computer Science & Engineering
CGPA: 4.0/4.0

Indian Institute of Technology-Madras   *Aug '18 - May '22*
BTech in Computer Science & Engineering
CGPA: 8.73/10

Research Experience

Testing x86 hardware model of the MMU   *May '25 - present*
Guide: Prof Reto Achermann, Prof Andrea Lattuada   *Max Planck Institute-Software Systems, Saarbrucken, Germany*
- Working on proposing a formally tested model of the Memory Management Unit for the x86 hardware.
- Started this as an intern project over the summer at MPI-SWS

AI Manager   *Jan '25 - present*
Guide: Prof Ryan Huang, Prof Mosharaf Chowdhury   *University of Michigan, Ann Arbor*
- Contributing towards building an OS management abstraction to efficiently support concurrent AI applications.

Cascading Failure Mitigation   *Oct '24 - April '25*
Guide: Prof Ryan Huang   *University of Michigan, Ann Arbor*
- Worked on LiteLib, an eBPF-based solution for software fault tolerance in microservice applications.
- This led to a co-authored submission at the **NSDI 2026** conference.

Anomaly detection in Software Defined Networking   *Nov '23 - July '24*
Guide: Prof Mohan Guruswamy   *National University of Singapore, Singapore*
- Worked as a Research Engineer at the ECE department in the NUS-Cisco corporate lab.
- Developed a simulated testbed generating network traffic based on expected traffic patterns of 5G slice types for traffic classification and anomaly detection.
- Developed a network monitor that captures slice-level KPIs using the SDN controller.
- Resulted in a co-authored publication at the **IEEE CNS 2025** conference.

StarPlat: A Versatile DSL for Graph Analytics   *Feb '23 - Nov '23*
Guide: Prof Rupesh Nasre   *IIT Madras, India*
- Implemented and benchmarking parallel graph algorithms such as SSSP, K-Cores, and MaxFlow in OpenMP. Project files on GitHub.

Path detection to Acoustic Source in Dynamic Environment   *June '21 - June '22*
UGRC (Undergraduate Research in CS) + B.Tech Project, Guide: Prof Ayon Chakraborty   *IIT Madras, India*
- Worked on using Angle of Arrival (AoA) and intensity data from a sound source and the room contour to find a path toward the sound source. Project files on GitHub.

Teaching Experience

GSI for CSE 583 Adv Compilers Course   *Aug '25 - Dec '25*
University of Michigan-Ann Arbor   *Michigan, USA*
- Helped in creating course content such as homeworks and exams. Conducted office hours for students.

Work Experience

Software Engineer at Google   *July '22 - Oct '23*
Customer Onboarding Team, Google Cloud   *Bangalore, India*
- Contributed to UI development and backend integration for the data migration products, which enable workspace and chat migrations.

Quantitative Research Intern at JP Morgan Chase & Co *May '21 - July '21*
QR Credit Derivatives Team *Mumbai, India*

- Worked on improving the implementations for credit investable indices and migrating them to a common framework called Inscript.

Projects

eBPF applications for CXL memory management and observability *Sep - Dec '24*
Course project for the CSE582: Adv Operating Systems course

- Worked on leveraging eBPF support for dynamic tiered memory management policies especially under memory pressure.

Batching and Request Aggregation for LLM Inference in CPUs *Sep - Dec '24*
Course project for the CSE585: Adv Scalable Systems course

- Implemented request aggregation and batching in Llama.cpp to benchmark the effectiveness of batching strategies in CPU showing upto 20% speedup.

ASLR for the xv6 OS *July - Dec '20*
Assignments and course project the CS3500: Operating Systems course

- Through the course of 7 assignments (based on the MIT Course), explored the xv6 kernel in detail and implemented additional system calls, a tracing and alert mechanism, and optimizations such as lazy page allocation and copy-on-write. Also implemented a basic user thread library.
- For the course project, added support for Address Space Layout Randomization (ASLR) and randomized the position of the stack and executable sections to prevent buffer overflow attacks. Project Files on GitHub.

Compiler for C *July - Dec '20*
Course Project for CS3300: Compiler Design

- Developed a compiler for a subset of the C language for the x86 instruction set, written in *Lex* and *Yacc*.
- Performed optimizations such as common sub-expression elimination, unused variable elimination, etc.

nand2tetris *July - Nov '19*
Course Project for the CS2300: Foundations of Computer Systems Design course

- Constructed a virtual computer system from scratch. Built an assembler, virtual machine, and compiler for an abridged version of Java.

Course Work

- **Systems**: Adv Operating Systems, Adv Scalable Systems for GenAI, Adv Compilers, Operating Systems, Introduction to Computer Networks, Introduction to Database Systems, Computer Organization and Architecture, Foundations of Computer Systems Design, Smart Sensing for IoT, Secure Systems Engineering
- **Programming Languages & Formal Methods**: Compiler Design, Paradigms of Programming, Object Oriented Algorithms: Implementation and Analysis
- **Data Structures & Algorithms**: Design and Analysis of Algorithms, Programming and Data Structures
- **Artificial Intelligence & Machine Learning**: AI Foundations, AI, Pattern Recognition and Machine Learning

Technical Skills

Programming Languages	C, C++, HTML, CSS, Javascript, Typescript, Python, Prolog, OCaml, RISCV and x86 ISAs, Rust
Tools	GDB, Wireshark, Mininet, Ryu Controller, Git, LaTeX, AutoCAD, WordPress, Canva, Google Internal Tools: Cider, Critic, Piper, Fig, Boq, MS office

Achievements

- Was awarded the Moeller Award for outstanding academic achievements, a commitment to social responsibility, and mentorship or leadership in the academic community.
- Was among the top 100 girls selected globally to participate in the **Micron Global Women Mentorship Program** in 2021.
- Was selected for the **Microsoft Engage** 2020 mentorship program. Got an offer to return as a software engineering intern based on performance.
- Secured **All India Rank of 231** among 0.15 million students who qualified for **JEE Advanced** in 2018.
- Secured **KVPY** Fellowship in SA exam with an **All India Rank of 618** in 2016.
- Qualified and placed in **national top 1%** in National Standard Examination in Chemistry (NSEC) and National Standard Examination in Junior Science (NSEJS) in 2017 and 2015.