Vardaan Kapoor

510-714-0643 | Madison, WI | vkapoor5@wisc.edu | linkedin.com/in/vardaankapoor | github.com/ervardaan | http://www.vardaankapoor.site

Education

University Of Wisconsin, Madison	*BS in Computer Science, Data Science & Mathematics (Dean's List)*	*Dec 2025*

Key Coursework: Data Structures and Algorithms, Java Programming, Machine Organization and System Design, Operating Systems, Database Management Design and Systems, Compiler Design and Theory of Programming languages

Technical Skills

Languages: Java | Python | C/C++ | JavaScript | HTML/CSS | R   **Databases**: Supabase | PostgreSQL | sqlite | MySQL | mongodb
Frameworks: React, Node.js, Flask, JUnit, RESTful APIs, FastAPI, Tensorflow
Developer Tools: Git, Github, Gitlab, Docker, AWS (S3, EC2, Cloudfront, Route53, Lambda, IAM, boto, CloudWatch), VSCode, JIRA, Postman
Generative AI: LLMs, openAI, RAG, Prompt Engineering & Orchestration, Pinecone, LlamaIndex
Data Science & ML: scikit-learn, Matplotlib, openAI, Reinforcement and Q-Learning, dplyr, tidy, ggplot2, pytorch
System tools: GCC, GDB, valgrind, CUDA, Make, SIGALRM, SIGINT, SIGFPE, objdump

Experience

Software Engineering Intern | *Paragon Genomics, Fremont CA*   May 2024 – Aug 2024, May 2025 – Aug 2025
- <u>AI-powered curation db interface</u>: Developed FastAPI endpoints for Biomedical NER for incoming user queries. Integrated NER outputs with LLM-based sql query generation and execution. Fed SQL outputs to an LLM for relevant structured NL response generation. Created database on Supabase and DB schema augmented pgvector db for fine-tuning SQL query generation.
- <u>Data Pipeline Improvement:</u> Worked on AWS-based (S3, Lambda, SQS, DynamoDB) data processing pipeline application. Diagnosed and fixed memory leaks, application crashes and stability issues significantly improving reliability and performance. Strengthened debugging processes by leveraging AWS CloudWatch logs and refining logging strategies.

Machine Learning Platform Engineer Intern | *Soundsafe.AI*   May 2025 – Aug 2025
- Improved stability of Audio Watermarking algorithm dev by fixing OOM errors during high dim matrix multiplication.
- Added structure to CNN model repository layout, separating out hardcoded params for reproducible model generation and inference.

President – AI Club (AI@UW) | *UW Madison, Madison WI*   Jan 2025 – Present
- Led Cheese Hacks hackathon; secured $1200 funding, expanded industry AI expert mentorship.
- Built partnerships with Google, OpenAI, Meta and hosted events on ethical AI, design, and human-computer interfaces.
- Organized 'Day of AI' local outreach event. Got Dean's Award of Excellence for planning, innovation and leadership.

Software Engineering Intern | *VP Infotech, Irving, TX*   Jun 2023 – Aug 2023
- Performed automation testing of Lululemon and Hyphen web apps using cypress, selenium, and cucumber using JS.
- Developed a mobile testing framework using Appium, Postman, NodeJS and utilized TestRail for test management.
- Executed Data Warehouse SQL queries while creating test orders using Orders and Retail Management systems.

Undergraduate TA (CS Instructor) | *UW Madison, Madison WI*   Jan 2023 – May 2023
Cashier, Stocker and Barista | *UW Madison, Madison WI*   Sep 2022 – Dec 2024

Projects

2D Flappy Bird implementation | *Java, Object Oriented Programming, Algorithms* | GitHub   Jan 2024
- Java based game implementation with smooth physics-based bird movement and pipe obstacle generation in gameplay.
- Developed collision detection algorithms for player interaction ensuring consistent gameplay experience.

Ebay Data DB Implementation | *Python, Bash, JSON, Sqlite3* | GitHub   Jun 2024
- Analyzed eBay JSON data schema and content; designed relational schema with ER diagrams and schema definitions.
- Built SQLite database pipeline by implementing schema creation (DDL) and ETL scripts to import JSON data into structured tables.

React portfolio app on AWS | *React, TypeScript, AWS, NPM* | GitHub | http://www.vardaankapoor.site   Mar 2024
- Created a Vite static portfolio website with dynamic React components with contents hosted on S3.
- Configured GitHub Actions to automatically deploy github repo's artifacts to s3 to serve the application.
- Handled low latency issue with CloudFront and integrated Route 53 for custom domain and Cloudwatch for monitoring.

XV6 OS Job Scheduler | *xv6, MLFQ, system calls* | GitHub   Feb 2024
- Implemented system calls for retrieving filename from its descriptor, for modifying process state & retrieving scheduler information.
- Implemented a multi-level feedback queue (MLFQ) scheduler with CPU decay, adjusting process priorities based on prior CPU usage.
- Evaluated MLFQ scheduler performance against the reference xv6 scheduler using context switches and plotting total ticks vs time.

Leadership, Fellowships & Awards

Awards: Dean's List - Exceptional Undergraduate Achievement in Computer Science, Dean's Award of Excellence for AI@UW
Software Engineering Fellowships: Google SWEP, Meta ABCS, Boulevard, Ai4ALL Ignite Accelerator, HeadStarterAI