Devansh Khandelwal

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Education

Purdue University West Lafayette, IN

BS + MS in Computer Science (Minors in Math & Behavioral Economics) *(GPA: 3.82 / 4.00)* *Aug 2023 – May 2027*

- **Relevant Coursework:** Machine Learning, Artificial Intelligence, Algorithms, Systems, Software Engineering, Data Structures

Experience

Machine Learning Engineer May 2025 – Present

Purdue Engineering (Weather Climate Dynamics Lab) *West Lafayette, IN*

- Designed spatio-temporal CNNs capturing multi-day evolution trends, achieving 92% balanced accuracy up to 12-day lead times to enable early-warning insight generation for evidence-based model refinement.
- Engineered reproducible, version-controlled pipelines processing 165K+ samples using PyTorch and multi-threaded I/O, boosting training throughput by 40%; authored detailed runbooks and documentation to support lab-wide adoption.
- Applied Grad-CAM, LRP, and Integrated Gradients to surface physically consistent spatial attribution patterns, presenting findings to climate researchers and translating results into actionable model refinement strategies.

Software Engineer Intern May 2025 – Aug 2025

Tata Consultancy Services *Edison, NJ*

- Reduced deployment time by 40% and improved system reliability by 25% by containerizing microservices with Docker and orchestrating automated CI/CD pipelines using AWS ECS and GitHub Actions.
- Implemented enterprise-grade RBAC and real-time audit logging with AWS IAM, API Gateway, and CloudWatch to ensure SOC-2 compliance and secure distributed REST APIs serving 50K+ internal clients.

Team Lead and Club Treasurer Aug 2024 – Present

Hack the Future *West Lafayette, IN*

- Directed a 10 developers in a national non-profit initiative, owning end-to-end architecture and deployment of a full-stack MERN event platform with JWT authentication, real-time analytics, and Google Calendar sync, adopted by 200+ participants.
- Led Agile sprints, workshops and code reviews, mentoring developers in Git, REST APIs, and scalable backend architecture.

Head Teaching Assistant (CS 180, CS 182, CS 240, CS 251) Aug 2024 – Present

Purdue University *West Lafayette, IN*

- Mentored 2,000+ students across OOP, discrete math, programming in C, and data structures & algorithms through labs, office hours, and live debugging; developed structured course content and assignments to enhance conceptual clarity.

Data Scientist Intern Jan. 2024 – May 2024

Cisco (Data Mine Corporate Partner) *Remote, USA*

- Built hierarchical forecasting models in Python, improving prediction accuracy by 15% across global product portfolios.
- Automated KPI reporting through scalable ETL pipelines, reducing manual analysis effort by 30%.

Projects

Artemis (**1st Place, DubHacks 2025**, University of Washington, Seattle) | *Electron, Python, Kotlin, OpenCV*

- Built an AI-driven orchestration system that optimizes lighting, music, and browser context using real-time gaze tracking.
- Engineered real-time cross-device sync pipeline leveraging WebSockets and IoT triggers to maintain <50ms latency.
- Developed Kotlin-based Android client enabling bandwidth throttling and adaptive notifications to sustain deep work focus.

Soft Actor Critic (SAC) Portfolio Allocator | *Python, PyTorch, Gymnasium, yFinance, Pandas*

- Boosted portfolio Sharpe ratio by 6.6% (vs. EW) and 30% (vs. SPY) using attention-enhanced SAC across 10-year backtests.
- Developed a production-ready RL pipeline with CI/CD integration, $90\%+$ unit test coverage, and automated forward-testing.

Unix Shell Interpreter | *C, Lex/Yacc, POSIX Syscalls, IPC, Descriptor-level I/O routing*

- Built a Unix-style shell in C using Lex/Yacc, implementing lexical analysis, grammar parsing, and command execution.
- Implemented glob expansion, environment variable substitution, and I/O redirection via POSIX process control.

Technical Skills

Languages: Python, Java, C++, C, JavaScript (ES6+), TypeScript, SQL, Bash, x86-64 Assembly
Frameworks & Libraries: React, Next.js, Kotlin, Electron, Node.js, Express.js, PyTorch, TensorFlow, scikit-learn
Tools & Platforms: PostgreSQL, MongoDB, Firebase, Supabase, Docker, AWS, GCP, Git, CI/CD, Postman, SDLC
Concepts: Secure System Design, Distributed Systems, Microservices, Time-Series Modeling, Machine Learning, API Design, Statistical Modeling, Algorithms, Networking, Database Design