Dev Singh

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EDUCATION

University of Illinois Urbana-Champaign — Urbana, IL

Master of Computer Science — *Aug 2025 – May 2026*

Bachelor of Science in Computer Science (Minor in Business) — *Aug 2022 – May 2025*
- Course Assistant for System Programming (Aug 2024 – Present). Redesigned course autograder with a Jenkins backend, improving maintainability and enabling easier addition of comprehensive test cases while reducing failed grading jobs.
- Course Assistant for Numerical Methods (Jan 2023 – Present). Assisted students during office hours and group assignments. Redesigned online textbook.

EXPERIENCE

Capital One — McLean, VA

Software Engineer Intern — *June 2024 – August 2024*
- Automated fraud discovery and shared-attribute linking from card transaction data, estimated to **reduce fraud investigation time by 16%**, reduce operational costs by approximately $5M, and enhance financial integrity by reducing fraud write-off losses.
- Implemented **end-to-end testing frameworks**, along with **central error handling and logging systems**, to increase application resiliency and enhance production support operations.
- Built a scalable full-stack application using **TypeScript**, **React**, **AWS Fargate**, **AWS Neptune (Graph DB)** and **Kafka**.

Caterpillar Inc. — Chicago, IL

Software Engineer/MLOps Intern — *May 2023 – December 2023*
- Cut anomaly detection pipeline runtime by 86%, resulting in a boost in after-market service sales and improved operational efficiency.
- Achieved **an eightfold increase in supported throughput** by leveraging an event-driven architecture, asynchronous I/O, multi-threaded operations, and Redis caching to enhance performance and scalability.
- Prevented security breaches by implementing CI/CD pipelines for vulnerability scanning, regression testing, and alerting.

Zakti Security Labs — Naperville, IL

Software Engineer Intern — *May 2019 – April 2023*
- **Reduced non-compliant and unauthorized accesses to regulated systems by 15%** through the development of custom client-focused tools in Node.js, Java and Python that enable businesses to identify and mitigate data risks proactively.
- **Developed disaster response and recovery plans** that enable business continuity and recovery for high-risk organizations.
- Performed security audits for clients using the **NIST and OCTAVE cybersecurity frameworks** to deter cyberattacks.

PROJECTS

ACM @ UIUC | *React, TypeScript, Python, AWS Lambda, DynamoDB, S3* — Aug. 2022 – Present
- Built a serverless, multi-region, platform for event management, merchandise sales, member services, and more with 99.99% uptime for 1000+ users.
- Improved cybersecurity posture by implementing fine-grained access controls and zero-trust security using Microsoft Entra ID and Cloudflare Access, along with custom internal tooling.
- Chaired the Infrastructure Committee, recruiting and mentoring new team members to enhance development skills, foster collaboration across development teams, and secure buy-in from other committees and groups.

Kilpi | *Node.js, C++, SQL, Kubernetes* — Feb 2021 – Oct 2022
- Streamlined confidential information exchange via an intuitive end-to-end encrypted portal for regulated industries and businesses with stringent privacy requirements.
- Ensured compliance with HIPAA, GDPR, and SOC2 standards.