

Dev Singh

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EDUCATION

University of Illinois - Grainger College of Engineering
B.S. IN COMPUTER SCIENCE

Champaign, IL | Aug 2022 - May 2025
GPA: 4.0/4

- **Coursework:** Data Structures, Computer Architecture, Numerical Methods, Discrete Structures.
- **Programming Languages:** C/C++, Java, Python
- **Minor:** Business

EXPERIENCE

UNIVERSITY OF ILLINOIS | INCOMING CS 357 COURSE ASSISTANT

Urbana, IL | Start August 2023

- CS 357 is the numerical methods course at UIUC. I will be assisting students with labs, homework, and machine problems.

CATERPILLAR INC. | DIGITAL AND ANALYTICS INTERN

Chicago, IL | May 2023 - August 2023

- Developed MLOps tools on an **Agile** team to facilitate the validation and deployment of ML models on the Cat Helios team.
- Integrated automated code scanning and analysis tools into existing pipelines to reduce security hotspots.
- Leveraged **AWS Lambda, S3, DynamoDB, CloudFormation**, and **API Gateway** to create a distributed model cleanup and testing tool.

ZAKTI SECURITY LABS | SOFTWARE ENGINEER INTERN

Naperville, IL | May 2019 - April 2023

- Developed and deployed custom, client-focused cybersecurity solutions for high-risk businesses.
- Used **Node.js, SQL, Azure Functions**, and other technologies to improve regulatory compliance and facilitate secure exchange of confidential data, leading to a 15% increase in productivity and reducing cost by 30%.

KILPI LLC | Co-FOUNDER AND CTO

Naperville, IL | June 2021 - Present

- Architected and implemented an end-to-end encrypted message and file submission portal for high-risk businesses.
- Available at kilpiapp.com 🔗.

TIMAN GROUP | STUDENT RESEARCHER

Champaign, IL | Sep 2020 - Aug 2022

- Conducted research in computer vision to create a contrastive video transformer model in **PyTorch** to increase speed and accuracy of multi-modal video understanding tasks.
- Improved deep learning models through self-attention techniques for real-world deployment scenarios.

PROJECTS

ASSOCIATION FOR COMPUTING MACHINERY @ UIUC 📁

AWS, KUBERNETES, LINUX | 2022 - PRESENT

- Architected and led infrastructure modernization, including implementing **Azure Active Directory**, mail server, custom link shortener, **Kubernetes cluster**, and central events system.
- Served as Treasurer from March 2023 to March 2024. Focused on modernization of finance and business operations, including banking and spending, through technological solutions. Oversaw day-to-day operations as a member of the Officer Board.
- Utilized **AWS Lambda** and **DynamoDB** to automate frequent business processes, including event ticket sales and new member provisioning.

THE RED ALLIANCE 📁

EXPRESS.JS, MONGODB, PYTORCH | 2019 - 2022

- Designed cross-platform applications to facilitate FIRST Robotics Competition (FRC) data collection with a custom mobile app 🔗 and backend REST API 🔗 using **React, React Native, Node.JS, MongoDB**, and **Docker**.
- Developed a [data analysis engine](#) 🔗 using **scikit-learn** and **PyTorch** to provide competition insights and generate predictions about future performance.

EPOCH @ IMSA 📁

HPC, CUDA | 2019 - 2022

- Developed a team of 20 students to create and oversee a new CUDA-enabled HPC cluster using the SLURM job scheduler.
- Architected the technological vision and ensured overall reliability of the cluster at the hardware and software levels.

NOTUS 📁

NODE, ELECTRON, REACT | 2020

- Built a graphical tool to model the spread of COVID-19 and generate various safer room layouts using a Monte Carlo algorithm.

VAXFINDER 📁

NODE, TYPESCRIPT | 2021

- Founded a service with over 1,000 users in the Chicagoland area that scans over 30,000 pharmacy locations around the country every 15 seconds, immediately notifying users by phone or message when a COVID-19 vaccine appointment is available near them.

THINKPAD TOOLS 📁

PYTHON, NODE, ELECTRON, LINUX | 2019-2021

- Developed a userspace tool to read and write hardware properties to the Lenovo Thinkpad system controller on **Linux**.
- Provides feature-parity with the first-party Windows client. Used by 500+ users around the world.