AYUSH JUVEKAR

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CAREER OBJECTIVE

Motivated and innovative Computer Science graduate student with a strong foundation in software development, full-stack engineering, and machine learning. Seeking a **Software Engineering Intern** position to apply technical expertise and problem-solving skills in building scalable, efficient, and impactful software solutions.

EDUCATION

Michigan Technological University | Houghton, MI
Master of Science in Computer Science | Expected Spring 2026 | GPA: 3.83 (First Semester)

Pune Institute of Computer Technology | Pune, India
Bachelor of Engineering in Computer Engineering | June 2024 | GPA: 8.14/10 | First Class with Distinction

PROFESSIONAL EXPERIENCE

Teaching Assistant - Physics Department

Michigan Technological University | Houghton, MI | September 2024 - Present

- Assisted in facilitating undergraduate physics courses, providing guidance to over 60 students per semester.
- Conducted tutorials and office hours to support students in mastering complex problem-solving techniques.
- Developed clear and concise instructional materials, improving student comprehension by **15%**.
- Collaborated with professors to ensure course objectives were met, demonstrating teamwork and communication skills transferable to software development.

Secure Data Analytics Module Using Homomorphic Encryption

Computer Vision, Blockchain, and Distributed Systems Lab (CVBDSL)

- Built a secure data analytics pipeline capable of processing encrypted datasets with minimal latency, maintaining **98%** data privacy compliance.
- Streamlined data analysis workflows, improving processing efficiency by **25%**.

RELEVANT PROJECTS

Particle Vibration Analysis System

- Developed a computer vision system using ZED 2 stereo cameras and OpenCV to track particle movement on vibrating plate, while creating visualization tools for trajectory and velocity analysis.
- Designed a comprehensive 3D data pipeline, and applied statistical methods to correlate motion patterns with vibration frequencies for mechanical engineering research.

Anomaly Detection in Crowd Surveillance Using Edge Computing

- Designed and implemented an optimized machine learning system to detect anomalies in real-time video feeds, reducing response time by **40%** compared to traditional cloud-based models.
- Improved model accuracy by **15%** by integrating advanced neural network architectures.
- Deployed the system on edge devices, enhancing surveillance efficiency and reducing server costs by **30%**.

Full-Stack Applications

- **BookApp (2022):** Created a TypeScript application for tagging books, using technologies like React, Node.js, Express, and MongoDB.

- **YelpCamp (2021-2022):** Developed a camping activity platform, using technologies like Node.js, Express, MongoDB, and Bootstrap.

- **YayCamp (2024):** Rebuilt the camping platform with TypeScript, Next.js, TailwindCSS, Clerk, Prisma, and Neon DB Postgres for enhanced performance and maintainability.

- **Ranking (2024):** Developed a React and Vite app for ranking items, featuring a unique scoring system based on decision time. Using TailwindCSS, Vercel and Upstash.

Carbon Monoxide Concentration Monitoring System

- Designed an IoT-based air quality monitoring system, reducing detection time by **35%** and improving accuracy by **20%** over baseline models.
- Findings presented at the **ESCI 2023 International Conference**, highlighting efficiency improvements in air filter automation.

TECHNICAL SKILLS

- **Programming Languages:** Python, JavaScript, Java, C++, Go, Rust, C#
- **Frameworks & Libraries:** React, Next.js, Node.js, TailwindCSS, NumPy, Pandas, Scikit-learn, TensorFlow
- **Domains:** Full-Stack Development, Software Engineering, Machine Learning, IoT, Data Science
- **Tools & Technologies:** Docker, Git, Linux, Bash, Vim, VS Code
- **Softwares:** MS Office Suite, LaTeX Overleaf

AWARDS & RECOGNITION

- **PICT InC 24:** 2nd Place in Concepts-DS (2024)
- **Pulzion 2023:** Technical Presentation Event Participant
- **Mathex and MSCE Scholarships:** Recognized for academic excellence

KEY COMPETENCIES

- Proficient in **full-stack development** with a strong focus on building scalable and user-friendly applications.
- Experienced in **machine learning** models for predictive analytics and anomaly detection.
- Skilled in using **modern development tools** (Docker, Git, Linux) to streamline workflows and ensure efficient delivery.