Rishab Vempati

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Education

Purdue University West Lafayette, IN

B.S. in Computer Science & Artificial Intelligence, GPA: 3.85/4.00 *Aug. 2023 – May 2027*

- **Honors**: Dean's List & Semester Honors (All Semesters)
- **Coursework**: Data Structures & Algorithms, Systems Programming, Operating Systems, Analysis of Algorithms, Computer Architecture, Database Systems, Introduction to AI, Object Oriented Programming

Experience

Ekai Aug. 2025 – Present

Software Engineering Intern *Remote*

- Spearheaded the development of an "AI Twin" Enterprise Assistant for Microsoft Teams using Azure and Flask.
- Optimized retrieval algorithms to reduce query response time to $<$2s for 50+ concurrent users, while achieving 100% accuracy on numerical queries via SQL integration.
- Architected a scalable RAG pipeline using Model Context Protocol (MCP), Microsoft Graph API, and Vector Databases to index and retrieve context from 10,000+ enterprise documents.

AssetMark Jun. 2025 – Aug. 2025

Software Engineering Intern *San Francisco, CA*

- Re-engineered the legacy Enterprise Communication Service using .NET, C#, and SQL to improve scalability.
- Scaled system throughput by 300% to process 1M+ daily emails, implementing robust fault tolerance and automated retry policies that guaranteed 99.99% delivery reliability.
- Orchestrated an asynchronous event-driven architecture utilizing Azure Service Bus, Dead Letter Queues, and Microservices to decouple dependencies and handle traffic spikes.

Accelera Payments May 2024 – Aug. 2024

Software Engineering Intern *San Francisco, CA*

- Engineered a high-frequency financial transaction engine processing $50M+ in daily volume using Kafka.
- Optimized Kafka partitions to handle 50k+ daily ISO 20022 payments with sub-millisecond latency, ensuring zero data loss during critical outages via dead-letter mechanisms.
- Deployed distributed microservices within CI/CD pipelines, reducing deployment time by 40% and enabling seamless rollbacks.

Cisco Jan. 2024 – May 2024

Data Science Researcher *West Lafayette, IN*

- Led demand forecasting initiatives, analyzing 10TB+ of supply chain data using Scikit-learn and Pandas.
- Improved prediction accuracy by 18% for 10k+ SKUs and optimized ETL pipelines to process 5M+ historical records 60% faster than previous benchmarks.
- Developed Bayesian Inference models to simulate complex supply chain scenarios, reducing stockout risks by 25%.

Projects

Parking Lot Detection & Mapping | *Python, PyTorch, OpenCV, Docker* Aug. 2023 – Dec. 2023

- Led a team of 4 to develop a U-Net segmentation model for satellite imagery, achieving 84% IOU accuracy.
- Automated data ingestion pipelines for 50GB+ of Bing Maps API data and containerized the training workflow.
- Contributed 5,000+ validated map updates to OpenStreetMap, significantly improving open-source urban data.

YourPingMe | *Python, React, Redis, Celery, LLM APIs* July 2025 – Aug. 2025

- Engineered a unified AI wrapper aggregating major LLM providers (OpenAI, Anthropic, Gemini) into a single API.
- Built a scheduling engine using Redis and Celery to execute 1,000+ complex prompts at user-defined intervals.
- Designed an event-driven notification system to push asynchronous alerts (SMS/Email) instantly upon task completion.

Technical Skills

Certifications: **AWS**: Certified Cloud Practitioner, **Microsoft**: Azure Fundamentals (AZ-900)
Languages: Python, Java, C++, C, C#, SQL, JavaScript, TypeScript, Bash, Shell, R, HTML/CSS
Frameworks: FastAPI, Flask, React, Next.js, Node.js, .NET, PyTorch, Scikit-learn, Pandas, NumPy, OpenCV, Tailwind
Developer Tools: Docker, Kubernetes, Kafka, Redis, Git, GitHub Actions, Linux, Azure, AWS, PostgreSQL, MongoDB