

# SAMI VELIU

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## EDUCATION

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**Michigan State University – College of Engineering** Expected Graduation: Dec 2026  
*B.S. in Computer Science & Business Administration (Dual Degree)* GPA: 3.83/4.00  
• **Relevant Coursework:** Data Structures & Algorithms, Distributed Systems, AI & Machine Learning, Database Systems & SQL, Web Development, Low Level Computer Architecture (ARM).

## EXPERIENCE

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**AI / ML Operations Intern (Incoming)** May 2026 – Present  
*Okta* Chicago, IL  
• Deploying **agentic LLM pipelines** using **LangChain** and **Ollama** to automate internal knowledge retrieval.  
• Engineering **AI-powered error triangulation** systems via **RAG** and **vector search** to surface ownership gaps and defects in **production documentation** at scale.

**Software Engineering Intern (Extended)** Aug 2025 – Jan 2026  
*Humana* Detroit, MI  
• Owned **back-end microservices** in **Python** and **Java** at a **Fortune 50** company, handling **healthcare benefits and claims routing** for **200K+ members** with reliability enforced via **CI/CD**, code review, and integration tests.  
• Scaled **REST APIs** (validated via **Postman**) and **ETL pipelines** feeding **member-facing product analytics**, reducing downstream pipeline latency by **40%**.

**Software Engineering Intern** May 2025 – Aug 2025  
*Humana* Louisville, KY  
• Architected **Databricks** pipelines ingesting **Intune**, **ServiceNow**, and **ConfigMgr** telemetry via **PySpark + SQL** to monitor **IT fleet health** across **70K+ enterprise devices**, improving deployment reliability by **45%**.  
• Built **MLflow**-tracked **anomaly detection** models surfacing **device failure and patch compliance risks** to senior IT leadership, enabling proactive remediation before incidents escalated.  
• **Company-Wide Hackathon Winner** (2025) – selected from all competing intern and engineer teams.

## PROJECTS

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**Monolith Recommendation Engine** | *C++, Multi-Language Systems, ML* Feb 2026  
• Implemented core ideas from **ByteDance's Monolith** research paper – building a **real-time recommendation system** with **collision-free embeddings** and **online training** in **C++**.

**HalfFull** | *Backend Dev, Electron, Node.js, JavaScript, IPC, System Optimization* Jan 2026  
• Led development of the **push notification system** for a live production desktop app, architecting an **Electron IPC offloading strategy** cutting idle RAM usage by **35%**.

**Prismatic Ray Tracer** | *C++, Low-Level Graphics, Linear Algebra* Dec 2025  
• Engineered a **physically-based ray tracer** from scratch in **C++** implementing **Blinn-Phong shading**, **reflection/refraction**, and **BVH acceleration** for real-time scene rendering.

**Distributed Data Pipeline Platform** | *Python, Anomaly Detection, MLflow* Sep 2025  
• Built an end-to-end **candidate generation** and **training example pipeline** with **online anomaly detection** and **release safeguards** – mirroring production ML infrastructure patterns.

## LEADERSHIP

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**President** 2024 – 2026  
*Spartan Food Security Council* East Lansing, MI  
• Personally raised **\$1M+ in annual grant funding** from Michigan's **MiLeap Program** & partnered with State Rep. **Julie Brixie** to fully fund the construction of a **new public food bank** in MSU's Union Building.

## TECHNICAL SKILLS

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**Languages:** Python, C++, Java, C#, Go, SQL, JavaScript, HTML/CSS  
**AI & Data:** Agentic Modeling, LangChain, Ollama, RAG, MLflow, Databricks, PySpark, ETL Pipelines  
**Infrastructure:** Docker, Kubernetes, Git, CI/CD, GCP, Azure, Postman, REST APIs, PostgreSQL, Databricks  
**Certifications:** CompTIA A+, Six Sigma White Belt