Mithra Kancheti

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Education

Purdue University Aug. 2022 – May. 2025

Double BS in Computer Science and Data Science, Minor in Mathematics

Core Courses: Machine Learning, Numerical Methods, Systems Programming, Statistical Theory
Certification: SAS 9.4 Base Programming Specialist
Teaching: MA 265: Linear Algebra TA

Experience

Kaiser Permanente - Software Engineer Jun. 2025 – Present

- Developer for internal tools to automate and optimize manual workflows, collaborating with technical and non-technical stakeholders to create and adhere to shifting specifications.
- Building, and maintaining data pipelines across multiple projects between Databricks, Azure, Oracle Server, etc. These support the most critical projects, satisfying intense business and regulatory scrutiny.
- Rewriting core table schemas to ensure dimension normalization, increasing data integrity and query performance.
- Developing Github Actions and Jenkins integrations to ensure the longevity and reliability of my products.

Purdue University - Linear Algebra Teaching Assistant Dec. 2022 – May 2023

- Assisted students in office hours, providing feedback and homework help.
- Organized and led study sessions, drafting materials and plans to maximize productivity.

Personal

GiftGen | *AWS, Terraform, Kubernetes*

- Created a website for users to generate gifts using a custom Text-to-3D inference endpoint using Microsoft Trellis.
- Using EKS, S3, RDS, Cloudwatch, and Cognito to run a resilient and scalable backend. Separate Dev and Prod environments are managed with Terraform, and CodePipeline with ArgoCD enables PR based promotion.
- Automatically handling DNS resolution using Terraform's Cloudflare integration, ensuring infrastructure updates are instantly visible.

Semantic Search Media Server | *Python, LLM, React, SQL, Docker*

- Built a selfhosted LLM powered system that automatically generates semantic tags for personal media files (text, images, and videos) to enable natural language search.
- Implemented entropy-based filtering to identify and downscale low-complexity images, optimizing speed and resource usage during model inference.

Song Performance Prediction | *Python, Pytorch, Postgres, Scikit-learn*

- Designed various regression models and a neural network to perform prediction of a song's performance based on track and artist attributes collected from various streaming services.
- Achieved a final accuracy of 80% with an R^2 of 0.98
- Collaborated in a team of 8 and used agile techniques such as stand-ups and Kanban boards to manage progress.

Robotic Guitar | *C++, Arduino, Embedded Systems*

- Built a robotic guitar using off the shelf Arduino parts and custom designed and 3D printed carbon fiber ABS actuators.
- Designed a power delivery system to step down a USB PD input into multiple regulated voltage rails.

Personal Server | *Proxmox, Docker, Grafana, Networking*

- Set up Proxmox VE to act as a hypervisor for various services including Jupyter Server, Ollama, PocketBase, etc. Acts as my development backend when starting on projects.
- Utilizing Docker Swarm to manage containerization and extensibility of service stacks, integrated with Prometheus and Grafana to monitor the health of services.
- VLAN tagging VM packets ensures a DMZ between my public services and my internal network.

Technical Skills

Languages: C/C++, Java, Python, R, JavaScript, Flutter, MATLAB, SQL, x86-64 Assembly, Cypher
Frameworks/Libraries: NumPy, Pandas, PyTorch, Pyspark, Playwright
Tools: PowerBI, Kubernetes, Docker, Terraform, Ghidra