Segni Mekonnen

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EDUCATION

Minnesota State University, Mankato — Mankato, MN
Bachelor of Science in Computer Science, Minor in Mathematics — *Expected dec. 2026*
- **Honors:** Dean's List and Dean's Scholarship Recipient

TECHNICAL SKILLS

Languages: Python, JavaScript, SQL (PostgreSQL) **Frameworks:** FastAPI, React, SQLAlchemy, Docker **Tools:** Git, VS Code, PyCharm, Render, Cursor **Libraries:** scikit-learn, pandas, NumPy

EXPERIENCE

Machine Learning Research Assistant / Team Lead — Jan. 2025 – Present
Minnesota State University, Mankato — *Mankato, MN*
- Led a team of four to build a Python-based AutoML system automating model training and evaluation for insurance prediction.
- Developed data preprocessing and model comparison pipelines using pandas and scikit-learn; tested five ML algorithms and analyzed performance metrics.
- Containerized workflows with Docker to improve reproducibility and reduce environment setup time by ~40%.

AI/ML Intern — Outamation, AI & Document Intelligence Team — Dec. 2025 – Present
Remote
- Built Python pipelines for mortgage-document understanding, blob classification, and automated document routing.
- Developed OCR and layout-aware extraction systems, evaluating multiple OCR engines and creating structured-data pipelines for unstructured documents.
- Implemented RAG-based retrieval workflows and integrated LLM prompt engineering into a Gradio chatbot for intelligent document querying.

Open Source Software Developer — Django Software Foundation — Aug. 2025 - October. 2025
Remote
- Fixed a core template parsing bug (PR #19944) after 1,500+ unit tests; improved error handling for invalid numeric literals.
- Authored advanced ORM documentation (PR #36657) clarifying query optimization and Manager usage for developers.
- Contributions merged into Django's main branch, improving reliability and developer experience for 1000s of users.

PROJECTS

Habit Loop – ML-Powered Habit Tracker | *FastAPI, React, PostgreSQL, scikit-learn, Docker* — June 2025
- Built a full-stack habit tracking app with a machine learning backend predicting user consistency from historical data.
- Developed REST APIs with FastAPI and SQLAlchemy; trained Random Forest models (96% accuracy) for real-time predictions.
- Containerized with Docker and deployed on Render; React frontend visualizes progress through dynamic charts.

Real-Time Chat Application – Team Project | *FastAPI, WebSockets, SQLAlchemy, Docker, Redis* — March 2025
- Collaborated with a 3-member team to design and deploy a real-time messaging system.
- Implemented WebSocket integration and async message broadcasting using FastAPI and Redis pub/sub.
- Added JWT authentication and containerized deployment for scalable, low-latency communication.

Weather Dashboard API | *FastAPI, HTTPX, OpenWeatherMap API, CSS Grid* — December 2024
- Integrated OpenWeatherMap API with async HTTP requests and caching for reliable data retrieval.
- Built a responsive UI and deployed frontend on GitHub Pages for cross-device accessibility.

LEADERSHIP

- Team Lead — Machine Learning Research Assistant: Led a 4-person research team developing an AutoML system; coordinated task assignments, code reviews, experiment workflows, and weekly milestone tracking.