YOHANNES NIGUSSE

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Rising junior pursuing dual degrees in Computer Science and Economics, with practical experience developing backend systems, RESTful APIs, and machine learning applications. Experienced in taking projects from concept to production deployment, working directly with users and real-world data. Skilled in Python, Flask, and scikit-learn, with proven ability to apply system design principles to solve business and research challenges. Seeking backend engineering or applied ML internships emphasizing technical ownership, scalability, and meaningful impact.

EDUCATION

St. Cloud State University Expected Graduation Date: Dec 2026
B.S. Computer Science (AI/ML Track), B.A. Economics | GPA: 3.6 | Expected: Dec 2026
Relevant Courses: Algorithms, Neural Networks, Data Mining, Intermediate Microeconomics, Industrial Organization
Clubs: Cloud Computing Club, Student Government Tech Fee Committee

TECHNICAL SKILLS

- **Languages & Frameworks**: Python, C++, JavaScript (Node.js), SQL, Flask, scikit-learn, Pandas, NumPy, MediaPipe, Prophet, PyTorch (in-progress)
- **DevOps & Deployment:** Git, GitHub Actions, Docker, Render, Firebase Authentication, Google Cloud (Cloud Functions, Storage), Linux Shell (SSH), Postman
- **Databases & Data Tools:** SQLite, Google Sheets API, Plotly
- **Applied Concepts**: RESTful API Design, CI/CD Pipelines, PCA Dimensionality Reduction, ML Model Deployment, Real-time Inference, Forecasting Models

EXPERIENCE

Software Engineering Intern – Kibur College **Remote/Ethiopia | Summer 2024**
- Built and deployed Flask-based REST API automating enrollment reporting and faculty performance tracking; improved departmental reporting efficiency by ~80%.
- Integrated Firebase Authentication with custom role-based access controls and Google Sheets API for real-time internal dashboards serving 1,200+ student records.
- Authored comprehensive API documentation and implemented robust error-handling strategies, facilitating smooth transition and ongoing use by internal IT teams.

Undergraduate Research Assistant – Brain-Computer Interface Lab **St. Cloud State University | Winter 2024 – Summer 2025**
- Developed EEG data preprocessing pipelines and real-time ML classifiers (logistic regression, k-NN) achieving sub-second latency in attention-state detection tasks.
- Built a PyQt-based GUI enabling live visualization of EEG signals for interactive cognitive experiments.
- Managed Ubuntu-based compute environment and automated SSH-based data workflows; contributed toward forthcoming publication on EEG-driven attention prediction.

SI PASS Leader (Python) – UMBC **Baltimore, MD | Fall 2023 – Spring 2024**
- Conducted 20+ peer-led sessions teaching Python fundamentals, recursion, data structures, and debugging to cohorts of 25+ students.
- Created targeted mock exams and interactive coding walkthroughs, contributing to a measurable 13% increase in final exam scores among regular participants.Fostered collaborative problem-solving skills through peer coaching and practical coding strategies.

PROJECTS

AI Caption Generator (Solo | Deployed) | Flask, OpenAI API, Prompt Engineering, Google Sheets API
- Developed Flask web app leveraging OpenAI's GPT API to auto-generate Instagram captions tailored to product descriptions, successfully tested by 50+ small business clients via GOJO Media Network (6K+ followers).
- Implemented structured prompt templates allowing tone/style customization; deployed to Render with integrated user analytics via Google Sheets API

Market Price Tracker – Ante Nigus Retail (Solo | Completed) | Python, BeautifulSoup, SQLite, Prophet, Plotly
- Engineered competitive price-monitoring platform by scraping and analyzing over 1,200 product data points across 5 competitor websites using BeautifulSoup and SQLite.
- Applied Prophet for accurate short-term price forecasting (>85% accuracy), providing interactive visualizations using Plotly dashboards to guide strategic pricing decisions.

Habit@ – Gamified Habit Tracker (Team | In Progress) | Flask, SQLite, Firebase Auth, REST APIs
- Designed and implemented backend logic for habit-tracking app, managing lifecycle states, user engagement, and reward triggers via Flask REST API and Firebase Authentication.
- Developed a scalable SQLite database schema optimized for analytics integration and user behavior insights.

ASL Gesture Classifier (Team | Completed) | Python, MediaPipe, scikit-learn, NumPy, PCA
- Built real-time classifier for recognizing 15 static American Sign Language gestures with webcam data, using MediaPipe for hand-landmark detection, PCA for dimensionality reduction, and Random Forest classification.
- Achieved 94% accuracy and <100ms inference latency; led preprocessing pipeline and managed integration phase and final live demo.

CWIT Attendance Automation (Solo | Completed) | Python, Google Sheets API
- Automated event attendance logging for UMBC's Center for Women in Technology (CWIT) by integrating Python scripts with Google Sheets API.
- Significantly reduced staff workload by ~10 hours/month; solution adopted across multiple CWIT programs.