

# KETO ETEFA GEMECHU

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## EDUCATION

**Pomona College** | *Bachelor of Arts in Computer Science*

| **Expected Graduation: May 2025**

**Coursework:** Algorithms Data Structures, Languages & Theory, Natural Language Processing, Neural Networks, Functional Programming, Advanced Programing, Machine Learning, Data analysis, Applied Computing , Vector Databases,

**Awards:** Matchlighters Scholarship, General Pomona Scholarship ( $\approx$  First Ethiopian in five years)

## SKILLS

**Programming:** Python, Java, SQL,Flutter, C, HTML, CSS, R, Javascript, C++, Rust, R, XML, Haskell

**Developer Tools/Software:** AWS, Anaconda, Android Studio, Docker, Mongoose, R Studio, Vim, Xcode, Terminal

**Frameworks/Libraries:** React, Flask, pandas, OpenCV, Tensor Flow, JUnit, PyTorch, Matplotlib, Numpy, scikit-learn

## WORK EXPERIENCE

**Sematha Technologies, Virtual Internship.**

May - Aug 2024

*Software Engineering Intern - - Python, Flask, MongoDB, React, AWS, Docker, Firebase, Jest*

- Engineered backend services and APIs for custom business applications using Python and Flask, streamlining data processing and reducing client-reported errors by 15%, which improved reliability and customer satisfaction.
- Enhanced user experience by 20% through the development of responsive frontends using React and React Router, enabling faster navigation speeds and improving usability based on client feedback, testing, and performance reviews
- Utilized Vite for builds and deployments, optimizing release cycles by 30%, while integrating React Context API and custom hooks to improve state management, simplify frontend workflows, and streamline overall development processes.
- Achieved 85% test coverage with Jest and React Testing Library, optimizing asynchronous operations, implementing real-time notifications, improving maintainability by refactoring components, and streamlining MongoDB pipelines.

**Somelecu, Freelance.**

Aug 2024 - Present

*Software Developer - C++,Rust, Linux*

- Developed a blockchain desktop client using Rust and C++ to enable secure transaction processing and peer-to-peer communication, ensuring data integrity through cryptographic protocols and fault-tolerant validation algorithms.
- Assisting in building cryptographic modules for hashing (SHA-256) and digital signatures, leveraging asynchronous frameworks like Tokio (Rust) and C++ Boost.Asio to enable peer-to-peer communication across nodes

## RELEVANT PROJECTS

**Pai-Claremont, Claremont, CA** (Flutter + Dart + Firebase + Firestore + Mockito)

Apr - Jun 2024

- Designed and developed a Flutter and Dart-based full-stack mobile application to automate data collection and enhance research workflows at the University of Miami. Integrated Firebase for secure data storage, real-time updates, and Firestore for offline syncing, resulting in a 30% improvement in research data accuracy and efficiency.
- Developed advanced UI components with Flutter's Material Design and custom widgets, boosting data collection efficiency by 50%. Utilized Provider and Dart's async features to provide responsive user interactions.
- Refined application performance and reduced load times significantly by profiling and optimizing Dart code with DevTools. Implemented Flutter's hot reload for rapid testing and debugging and conducted rigorous testing using Flutter Test and Mockito, leading to measurable gains in system reliability and user satisfaction with the platform.

**Truck Driver's Drowsiness Detection System** (TensorFlow + scikit-learn + OpenCV )

May - Dec 2022

- Developed a drowsiness detection system using ANN and KNN models with TensorFlow and scikit-learn, achieving 85% accuracy, and designed a robust preprocessing pipeline with pandas and NumPy to clean and analyze driver behavior data.
- Built a real-time data pipeline with OpenCV, HOG features, Haar Cascades, and Eye Aspect Ratio on AWS EC2 for driver monitoring, integrating sound alarms, Twilio messaging, and AWS SES for real time notifications.
- Deployed the detection system on AWS Lambda for scalable, cost-effective processing, leveraging serverless architecture for seamless integration and high availability.

**College Application Support App** (GPT-3.5 + Multi-modal Generative AI )

Jan 2024 -Present

- Integrating multi-modal Generative AI and GPT-3.5 NLP models with vector databases to analyze and simulate successful applications, enabling personalized, data-driven feedback for underrepresented students.
- Developing AI-driven tools to assist students in navigating college admissions by providing tailored recommendations for college-specific and general statements, improving accessibility and application quality.

**Class Projects - Data Structures and Algorithms** (Java)

Jan - May 2023

- Built adv. sorting algorithms and data structures for recursion and AI; optimized dataset handling with I/O strategies
- Designed GUI to ensure rule adherence and deliver smooth, user-focused gameplay

**Neural Question Answering System** (Phyton+ NLP+ BERT)

Sept - Nov 2024

- Built a question-answering system using BERT, fine-tuned with domain-specific data to extract answers from unstructured text accurately.
- Evaluated performance with F1-score and Exact Match metrics, achieving a 15% improvement over baseline models.