

KEVIN RUSAGARA

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EDUCATION

Yale University

New Haven, CT (Aug 2023 - May 2027)

Bachelor of Science in Computer Science

Courses: C programming and Linux, Systems and Computer Architecture, OOP, AI and Deep Learning

SKILLS AND INTERESTS

Programming Languages: Python, C/C++, Swift, Java, JavaScript, Racket, SQL, Bash

Libraries/Frameworks: FastAPI, Flask, Spring Boot, React.js, Next.js, Bootstrap, PyTorch, TensorFlow

Tools / Platforms: Git, AWS, Postman, Google Firebase, Linux, OpenCV, Captum, NumPy, Matplotlib

Languages: English (Fluent), Kinyarwanda (Native), French (Intermediate), Swahili (Intermediate)

EXPERIENCE

Yale University & NSF | Software Developer

New Haven, CT | Aug 2025 – Present

- Building the software infrastructure for an open ecosystem supporting hyperspectral imaging research, and implementing file converters to transform ENVI formats into BIL, BIP, BSQ, GeoTIFF, and PNG outputs;
- Developing the Assembler and Dashboard modules using React.js and JavaScript, enabling seamless visualization and conversion of hyperspectral datasets.

UL Solutions | Software Engineer Intern

Fremont, CA | Jun 2025 – Aug 2025

- Developing internal automation tools in Python to control RF test equipment and manage SAR (Specific Absorption Rate) measurements, reducing setup time and ensuring repeatable test flows.
- Collaborating with RF engineers to debug and document embedded system workflows, while building scripts that track firmware versions and assist with wireless device compliance reporting.

AI4ALL | AI Engineer Fellow

New Haven, CT | Sep 2024 - Apr 2025

- Developed a facial recognition CNN model using the Labeled Faces in the Wild dataset with over +13000 images, focusing on model interpretation with Captum's saliency and Grad-CAM visualizations.
- Built an ML/AI portfolio, with a focus on effective data handling, and advanced AI techniques.

Citadel Securities | Software Engineer Extern

New York (Hybrid) | May 2024 - Aug 2024

- Built a web application using Python and Flask to track budget expenses, integrating a stock market API for real-time portfolio tracking and tested 6 diverse trading strategies on the Amplify stock simulation.
- Acquired practical knowledge in financial APIs and software development for financial services.

Awesomity Lab | Backend Software Engineer Intern

Kigali, Rwanda | Jun 2024 - Aug 2024

- Developed the backend of Provigator, a bug-tracking system now in use by the company and have tracked 320+ bugs and integrated Google OAuth for secure and streamlined user authentication.
- Implemented CRUD operations for client, project, and user management, ensuring efficient data integration.

PROJECTS

Hyperspectral Imaging Ecosystem

React.js, JavaScript, ENVI, GeoTIFF, AWS, Git

- A Yale-NSF collaborative platform for hyperspectral imaging research, building tools that standardize and visualize multi-band spectral data.
- Developed core components for the Assembler and Dashboard, enabling researchers to convert and manage ENVI files into BIL, BIP, BSQ, GeoTIFF, and PNG formats.
- Engineered an intuitive web interface in React.js for efficient data exploration, improving usability and reproducibility across imaging workflows.

Facial Recognition with Saliency Maps

CNN, PyTorch, Captum, OpenCV, Matplotlib, TensorFlow, Keras

- A facial recognition model under development using CNNs in PyTorch aiming to achieve over 95% accuracy, integrating Captum for gradient-based visualizations like saliency maps and Grad-CAM. Leverages OpenCV and NumPy for image preprocessing, with Matplotlib visualizing metrics and performance. Focuses on model interpretability to enhance understanding of how the model makes decisions.

Provigator API

Python, FastAPI, SQLite, Google OAuth

- A FastAPI backend for a bug-tracking system at Awesomity Lab, using SQLite for centralized management of clients, projects, and users. Integrates Google OAuth for secure authentication and supports full CRUD operations. Tracked and resolved over 320 bugs, significantly improving software quality assurance at Awesomity Lab.