

Cole Rodney Migisha

Computer scientist building automation, intelligent systems and the interfaces around them

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PROFILE

I look for the reason first, then build so that the reason is honoured. I am a third-year computer science student specialising in AI and Robotics and also studying data science, because automation cannot be perfected without understanding data. I am looking for internship and junior roles in automation and data pipelines. I design my systems and make the decisions, use AI tools to produce first drafts of code, then review, change and test them until they do what I intended.

EDUCATION

BSc Computer Science, AI and Robotics track | Uganda Christian University Sept 2024 – present
CGPA 4.73 out of 5. Coursework: computer vision, deep learning, machine learning, data engineering and databases.

Uganda Advanced Certificate of Education | St. Mary's College, Kisubi 2022 – 2023
President of the ICT Club.

Uganda Certificate of Education | St. Mary's College, Kisubi 2017 – 2021

EXPERIENCE

IT Intern | Uganda Civil Aviation Authority, Entebbe Apr – Aug 2026

- Built a web-based system for handling passenger complaints, connecting passengers, service providers and Authority staff in one workflow.
- Built a simple Java desktop replica of an airport operational database, for practising how flight records are amended.
- Worked across the IT department, including systems, database design, web development and hardware repair.

Web Designer and Manager (Intern) | Makerere University Innovation Pod Feb – Sept 2024

- Built the innovation hub's website and coordinated its media, using JavaScript, Python and SQL.

SELECTED PROJECTS

Data Pipeline (Python, Spark, pytest)

Built ingestion, validation, cleaning, merging and logging stages that turn messy data from separate sources into clean tables, with repeatable runs, automated tests and a star schema.

Personal HQ (Python, Notion API, GitHub Actions, running)

Turned 33 pages of handwritten daily notes into a working Notion system, with safe dry runs by default, tests that never touch Notion, and a scheduled GitHub Action.

AirQo PM2.5 Prediction (Python, scikit-learn, LightGBM, team of two)

Worked on predicting hourly air pollution in Ugandan cities from low-cost sensor data, focusing on filling gaps in the data and on drift monitoring. The model is served through a live dashboard.

Dayglass (Python, PySide6, SQLite, pytest)

Designed and built a minimalist floating daily planner for Ubuntu, with weekly objectives, a focus timer, automated tests and recorded design decisions.

NetDoctor (hackathon prototype, team project)

Worked on testing, bug fixing and quality for a network diagnostics platform that helps customers and internet providers find where a connection has failed.

RESEARCH

Pose-Based Suspicious Activity Detection (in progress)

Investigating whether computers can flag suspicious behaviour from body movement, and whether noisy real-world training data helps. Built a YOLOv8-Pose and ByteTrack pipeline and compared five model families on 947 sequences. Preliminary result: 87.3% accuracy on 189 held-out sequences, catching 19 of 38 suspicious sequences, against 79.9% for always guessing normal.

LipScribe (in progress, team of six, model lead)

Audio-visual speech recognition for live captions in noisy rooms. Built the mouth cropping pipeline and audio encoder, and refined the data on the team's GPU workstation. Training has not started.

Systematic Literature Review (manuscript in preparation)

A PRISMA-guided review of computer vision for detecting suspicious activity in surveillance video.

SKILLS

Intelligent systems	PyTorch, scikit-learn, LightGBM, OpenCV, TensorFlow, Evidently
Data and automation	Python, pandas, NumPy, SQL, Spark, Airflow, DuckDB, Parquet, pytest, Git
Systems and web	FastAPI, Flask, Django, Node.js, Express, React, TypeScript, Java, Oracle, MySQL, C, C++
Design	Figma, Illustrator, Inkscape, Canva, Blender
Currently learning	Cloud deployment, Docker, MLflow

ACHIEVEMENTS

- Bronze Honour, International Youth Math Challenge 2025.
- Invited to a national mathematics camp, where the top 100 students in the country were tested to select a team of 15.
- Competed with a team at the Africa’s Talking hackathon, building NetDoctor.

LEADERSHIP

Public Relations Manager Honours College, Uganda Christian University	Nov 2025 – Nov 2026
Led the College’s communications and designed its visual campaigns.	
Class Representative Computer Science, Uganda Christian University	
Elected to represent the class.	
Co-founder and Director of Administration Empathy’s Embrace	2022 – 2024
Coordinated the executive team, including an outreach visit to a home for children with disabilities.	
References available on request.	