

# Emmanuel Ouang-namou Adoum

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*Click on any research project title in blue to view it on GitHub or Google Drive, or visit my [GitHub profile](#)*

## EDUCATION

### Ashesi University

BSc. Computer Engineering

Berekuso, Eastern Region

**Expected Date of Graduation: July 2027**

### African Development University (ADU)

AS. Artificial Intelligence

Niamey, Niger

**Oct. 2022 – Dec. 2023**

### Complexe Scolaire Elie Tao Baydo

Baccalaureate (series C)

Pala, MKO, Chad

**Oct. 2021 – Jul. 2022**

## ACHIEVEMENTS | AWARDS

### MasterCard Foundation Scholar Program Scholarship

Ashesi University

Accra, Ghana

**Jan. 2024 – July 2027**

### 1st Place, International Baccalaureate Award in Chad

Recognized for exceptional academic excellence, ranking first nationally among 100,000+ students.

**Sept. 2022**

### 1st Place, Computer Programming and Math Competition award

Tunisian University

Awarded for innovative solutions and algorithms in a competitive international setting.

Tunis, Tunisia

**Apr. 2023**

### Ashesi Career Fair Programming Competition Award

Ashesi University

Accra, Ghana

**July 2024**

### Student Excellence award nominee

Ashesi University

Accra, Ghana

**Nov 2024**

## WORK EXPERIENCE | VOLUNTEER WORK

### Marketing Extern

Extern

**Apr 2024 – May 2024**

USA

- Cross-checked and confirmed calculations made with respect to finances of some projects.
- Designed new advertisement strategies that increased monthly sales by 5%.

### Environmental Activist and Tree Planting Advocate

Tree Planting Initiative

**Jan 2019 - Present**

Gounou-Gaya, Chad

- Led efforts to plant over 500 trees to combat deforestation and promote environmental sustainability.
- Engaged local communities to raise awareness on climate change and conservation.
- Recognized for impactful contributions to fighting climate change.

### Engineering Calculus Tutor

Ashesi University

**Jan 2025 – Present**

Accra, Ghana

- Provide **one-on-one and group tutoring** to help students master calculus concepts
- Simplify complex topics like **differentiation, integration, limits and continuity**.
- Develop problem-solving strategies to improve student understanding and performance

### Volunteer instructor

Code4All, at Ashesi University Accra

**Jan – June 2024**

Accra, Ghana

- Engaged 100+ underserved high school students in foundational programming, leading to a 80% improvement in their coding proficiency.
- Developed and implemented a curriculum covering basic programming concepts using Python.

## PROJECT AND RESEARCH

### [Investigating the use of hydrogels in irrigation for sustainable agriculture](#)

Ashesi University – Berekuso, Ghana

**August 2024 – Dec 2024**

#### Co-Author, Research Paper

- Conducted research to determine optimal starch hydrogel concentrations for sustainable agriculture.
- Designed experiments with cross-linked borax hydrogels to assess water absorption, release, and re-release across different water qualities.
- Analyzed data using statistical tools (e.g., ANOVA, t-tests) and developed predictive models for hydrogel behavior.
- Published findings on hydrogels' potential to improve irrigation efficiency and address water scarcity in agriculture.

### DiscreteLearn- Interactive Discrete Math Platform

Nov 2024 – Dec 2024

Final Project – Discrete Mathematics Course, Ashesi University

Accra, Ghana

- In a team of 3, we Built it with React (TypeScript, Vite), Firebase, and Framer Motion: <https://discretelearn.web.app/>
- Integrated **Matplotlib** for dynamic visualizations
- Features **structured courses, interactive quizzes, and a resource library**
- Designed to make discrete math engaging and accessible

### Tumor Growth Modeling – Final Engineering Calculus Project

March 2024 – April 2024

Ashesi University

Accra, Ghana

- Applied the **Gompertz model** to analyze tumor growth, volume, and patient survival time.
- Used **GeoGebra** for visualization and simulation of different tumor types
- Collaborated with a **team of five engineering students** to develop mathematical insights.

### Airbnb Clone - ALX Software Engineering Project

Feb 2024 – May 2024

ALX Software Engineering

Online training

- Developed a **full-stack Airbnb clone** with **Python, Flask, MySQL, and JavaScript**
- Implemented **user authentication, database management, and dynamic UI**
- Built **RESTful APIs** and interactive front-end for seamless user experience
- Gained hands-on experience in **backend, front-end, and DevOps**

### Simple Shell - ALX Software Engineering Project

Jan 2024 – Feb 2024

ALX Software Engineering

Online training

- Developed a **custom UNIX shell** in **C**, handling commands, processes, and I/O redirection
- Implemented **built-in commands**, error handling, and memory management
- Gained experience in **system programming, system calls, memory management, and shell scripting**

### Solar System Simulation

Jul 2024 – Aug 2024

Ashesi University

Accra, Ghana

- Built a **realistic solar system simulation** using **Python and Pygame**
- Applied **physics concepts** to model planetary motion and gravitational interactions
- Included **accurate scaling, orbital mechanics, and visual effects** for realism

### Twitter Scraper With Selenium

Aug 2024 – Sept 2024

Ashesi University

Accra, Ghana

- Developed a **web scraper** using **Python and Selenium** to collect Twitter data
- Extracted and processed tweets for **sentiment analysis** in a **team of five**
- Automated data retrieval to analyze public perception of Nestlé brands

### Nestlé Sentiment Analysis Project

August 2024 – Dec 2024

Nestle Company

Accra, Ghana

- Led a project analyzing sentiment data from X, Facebook, Instagram, LinkedIn, and TikTok for Nestlé brands.
- Built predictive models to track public sentiment on products and brand reputation.
- Used machine learning and NLP to provide insights for improving customer engagement.
- Managed a team of 5, handling data collection, preprocessing, analysis and dashboard design.

### Freshman Hub – Lead Developer

Jan. 2024 – Present

Ashesi University

Accra, Ghana

- Developed a campus integration app with chat, interactive maps, support system, and buddy connection features.
- Utilized Expo React Native, TypeScript, socket io, and Firebase for a secure, cross-platform experience.

### Covid-19 Data Analysis project

April 2023

- Analyzed COVID-19 case data to identify trends and patterns in infection rates, recovery rates, and mortality rates.
- Utilized Python (Pandas, NumPy) for data cleaning and preprocessing, ensuring accurate and reliable datasets.
- Created interactive visualizations using Tableau and Matplotlib to present data insights to stakeholders.

### African Panther Shuttle

March 2024 – April 2024

Ashesi University

Accra, Ghana

- **Schematics and PCB Design:** Created detailed schematics and printed circuit boards using Fusion 360.
- **Programming:** Developed firmware for self-stabilization, parachute release mechanism, and sensors to read pressure, altitude, latitude, and longitude using Arduino.
- **CAD Modeling:** Designed the complete shuttle model in SolidWorks.
- **Electrical Simulations:** Conducted comprehensive electrical simulations using Proteus.

## CO-CURRICULAR ACTIVITIES

### Member of Parliament

Jan. 2024 – present

Ashesi University

Accra, Ghana

- Drafted and debated bills on education, student welfare, and campus development.
- Voiced student concerns and opinions to university administrators and faculty members

**Ashesi AI club, Secretary****Jul 2024 – Present***Ashesi University**Accra, Ghana*

- Developed proficiency in programming languages such as Python and Java
- Coordinated tasks, set deadlines, and ensured successful project execution.

**President – International Students Association (ISA)****Jan 2025 – Present***Ashesi University**Accra, Ghana*

- Lead and represent the **international student community**, fostering inclusivity and cultural exchange
- Organize events, workshops, and networking opportunities to support students
- Advocate for international student needs and collaborate with university leadership

**Robotics club – Vice president****Oct 2022 – May 2023***African Development University**Niamey, Niger*

- Developed proficiency in programming languages such as Python, C++, or Java
- Coordinated tasks, set deadlines, and ensured successful project execution.
- gained hands-on experience with robotics hardware and software, including sensors, actuators, and microcontrollers.

**CERTIFICATIONS****International Affairs Program****Jan 3<sup>rd</sup> – Jan 26<sup>th</sup>, 2025***Sciences Po**Paris, France*

- Completed a rigorous in-person program focused on global policy and international relations.
- Participated in a real-life climate change negotiation simulation at an international level.
- Developed insights into multidisciplinary approaches to pressing global challenges.

**Data Analysis Professional Certificate****May 2023***IBM**United-States*

- Comprehensive training in data analysis techniques, tools, and methodologies.

**Python for Everybody Specialization****Oct. 2023***University of Michigan**United States*

- Achieved mastery in Python programming, with applications in data analysis and automation, completing hands-on projects such as building data-driven web applications

**ALX Software Engineering Program****July 1<sup>st</sup>, 2023– July 10<sup>th</sup>, 2024***12-month intensive program, ALX Africa**Online Program*

- Completed a rigorous, hands-on software engineering program covering full-stack web development, system design, and problem-solving.
- Gained proficiency in programming languages such as Python, C, and JavaScript, as well as frameworks like React
- Developed expertise in algorithms, data structures, and system architecture, with practical exposure to debugging and testing.

**Qwasar Silicon Valley – Software Engineering Program****Jan 1<sup>st</sup>, 2023 – Apr. 31<sup>st</sup>, 2024***5-month program**ADU & Qwasar Silicon Valley*

- Built full-stack web applications (JavaScript, Node.js, SQL) and collaborated on team projects.
- Focused on algorithms, system design, and professional coding practices (Git, CI).

**SKILLS | INTERESTS**

- **Languages:** Advanced Proficiency in French and English, intermediate in Spanish.
- **Hobbies:** Karate, Football, Music, handball, reading and playing piano.
- **Data Analysis:** Proficient in Python (Pandas, NumPy), R, SQL, Microsoft Excel.
- **Machine Learning:** Experienced with Scikit-learn, predictive modeling.
- **Mathematical skills:** Differential Equations, math modeling, calculus 1 & 2, multivariable calculus, linear algebra, discrete mathematics, probability & statistics.
- **Statistical Analysis:** Strong foundation in statistical methods and techniques.
- **Programming Languages:** Proficient in Python, dart, MATLAB, Java, C, C++, SQL, HTML, CSS, PHP, and JavaScript
- **CAD modeling:** Skilled in SolidWorks, Fusion 360, and Tinker cad for designing detailed CAD models.
- **PCB design, Schematics, Electrical simulations:** Proficient in Fusion 360, Kicad, Proteus.
- **Technologies:** Microsoft, react, angular, Node.js, Tailwind CSS, Bootstrap, Stripe, Framer motion.
- **Soft Skills:** Public speaking, Emotional Intelligence, Adaptability, Leadership, Critical thinking, Project and Time management.