

Cherno Basiru Jallow

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Skills

- Programming & Tools: Python | JavaScript | C++ | Java | OpenCV | Git/GitHub | HTML | CSS
- Machine Learning & AI: PyTorch | Fastai | Deep Learning | Computer Vision | Convolutional Neural Networks (CNNs) | Transfer Learning | Model Evaluation | Data Preprocessing & Feature Engineering
- Research & Data: Research Methods | Scientific Computing | Data Analysis | Jupyter Notebooks | Technical Writing
- Other Skills: Public Speaking | Technical Communication & Teaching | Project Leadership & Mentorship
- Languages: | English | Fula | Wolof.

Experience

YouTuber

[YouTube](#)

01/2023 - Current

- **CBJtech**, AI/ML Projects, Deep Learning, Coding Tips, Tech Life, Research Journey, Student Motivation, Self-Taught CS

Data Science/AI Intern

MRC Unit The Gambia at LSHTM

Fajara, The Gambia

03/2025 - 09/2025

- Developed a PyTorch-based CNN classifier for cats vs dogs classification, implementing custom dataset handling, data validation, and achieving 80% accuracy on 25K images. Deployed the model on Hugging Face and integrated interpretability tools (Grad-CAM, saliency maps) to visualize model decision-making processes.
- Designed and trained a pneumonia detection model using **Fastai** and **transfer learning** on 5000+ X-ray dataset, helping explore ML's potential in low-resource healthcare diagnostics. Presented project findings and technical insights at **UTG ICT Week 2025**, showcasing real-world AI applications to students, researchers, and professionals.
- Built a complete neural network from scratch in NumPy and python, implementing forward propagation with weighted linear transformations and non-linear activation functions, backpropagation using chain rule for gradient computation, gradient descent optimization with learning rate tuning, and loss function minimization to deepen my mastery of the mathematical foundations underlying modern deep learning architectures.
- Applied **PyTorch** for advanced **computer vision** tasks, gaining hands-on experience with CNN architectures, data preprocessing, and model evaluation.
- Worked under expert supervision to explore scalable ML workflows for scientific research, contributing to real-time discussions around algorithm performance and reproducibility.
- Collaborated in a research-driven environment with biweekly readings and seminars, applying insights to hands-on experiments in computer vision and machine learning.

Lead AI/ML Intern

OBENTaS GLOBAL

Brikama, The Gambia

02/2024 – 02/2025

- Built a **music taste prediction system** using **Python**, **scikit-learn**, and **pandas**, modeling user preferences through supervised learning algorithms.
- Won April 2024 **Best Team Member** award.
- Conducted research on the implementation of an **e-learning platform**, focusing on user engagement, accessibility, and digital infrastructure in low-resource settings.
- Collaborated with fellow interns and engineers to integrate AI features into internal tools, while presenting findings and prototypes to executive staff.
- Represented OBENTaS at **The Gambia's Trade Fair 2024**, advertising technical services and engaging with stakeholders to promote local innovation.

ICT Club President | Lead Instructor

Nusrat High School

Serrekunda, The Gambia

07/2023 – 07/2024

- Led **150+** active members, organized inter-class competitions.
- **Raised GMD 10k+** for tech trips, co-founded **Coders Hub**, and held weekly meetings.
- Instructed **50+** students weekly on coding fundamentals, web development, MS Office, and GIMP for graphic design.
- Designed and delivered customized lesson plans to improve digital literacy and empower student-led innovation.

Keynote Speaker

Various Tech Events

The Gambia

03/2023 - Present

- Accepted Speaker at Pycon Austria 2026. Delivered keynote presentations at major tech conferences, including Google DevFest Banjul 2024 & 2025 and PyCon Senegambia 2025, covering topics such as Building a Career in AI as a Student in Africa and Beyond the Basics: Using Python for Deep Learning and Scientific Discovery, inspiring 500+ tech enthusiasts.
- Delivered keynote and STEM talks at **Nusrat Senior Secondary School**, inspiring 250+ students across clubs and career events.
- Showcased a **pneumonia detection model** built with Fastai at **UTG ICT Week 2025**.

- Regularly invited by tech clubs and institutions to speak on AI, student innovation, and navigating a self-taught tech journey.

Projects & Hackathons

Data Pathways to Healthy Cities Dashboard

NASA Space Apps Challenge Banjul 2025 | Data & ML Engineer | Awarded 1st Place

Oct 2025

- Developed a full-stack data dashboard using NASA Earth observation data to give urban planners insights on city growth, air quality, and vegetation.
- Engineered data processing pipelines to transform raw satellite data into visualizations, enabling data-driven decisions for sustainable and human-centered urban development.
- Worked with a team of 4 to deliver a polished solution under tight deadlines, combining technical skills with teamwork to win 1st place.

PneumoniaNet - AI Assisted Childhood Pneumonia Screening Model

Lead ML Engineer | MRCG Hackathon 2025 | Awarded 2nd Place | Presented at OIC Conference Center

Oct 2025

- Led end-to-end development of a lightweight CNN for 3-class pneumonia classification (Normal, Infiltrate, Consolidation), optimized to run on standard CPUs for clinics with limited resources.
- Engineered the training pipeline to handle severe class imbalance, implementing a class-weighted loss function that improved detection of the critical "Consolidation" class (representing only ~12% of data).
- Added Grad-CAM visualizations so clinicians could see how the AI made its decisions, making the model easier to trust and use.
- Presented the technical solution and its public health impact to a panel of judges and clinicians at the OIC Conference, effectively translating complex AI concepts into tangible benefits for global health.

Voltify - IoT Smart Energy Management System

UNICEF Gambia Digital Innovation Sprint 2025 | Co-Founder | Top 5 Finalist

Dec 2025

- Designed and built IoT smart energy system solving critical infrastructure challenge: 60M+ African households manage prepaid electricity blindly with no usage visibility, no low-balance warnings, and physically inaccessible meters requiring manual 20-digit token input.
- Developed complete solution: ESP32-based smart meter with real-time current sensing and GSM/LTE connectivity + Flutter cross-platform app enabling usage tracking, predictive alerts, mobile money top-up (Wave/Afrimoney/Comcash integration), and remote power control.
- Demonstrated working prototype at national competition before UNICEF, MoBSE, and Government of Japan representatives. Advanced to Top 5 from dozens of teams; judges identified project as strongest technical submission.
- Presented at accompanying conference as panelist on STEM education barriers and as Youth Innovation Showcase exhibitor, validating product-market fit with educators, policymakers, and potential pilot households.
- Applied technical solution to address energy access, household dignity, and infrastructure modernization. Targeting initial deployment of 5,000 units (2.5% market penetration) representing GMD 15M opportunity.

Education

Bachelor of Computer Science

University of The Gambia

Faraba, The Gambia

03/2025 - 09/2029

- Major in Computer Science

Publications

- **LOWEL AI:** AI powered system using microscope and sensor data to detect waterborne bacteria in The Gambia. (Self-published, 2024)
- **Computer Vision for Crop Diseases:** Applied CV models to detect and classify diseases in Gambian farms. (Research Preprint, 2025)

Mentorship

- **Student Mentor:** Provided 1:1 support to aspiring tech students, offering guidance on programming, ML fundamentals, and self-taught learning strategies. (2023 – Present)
- **ICT Club Instructor:** Taught coding, web development, and digital skills to 50+ high school students weekly, fostering a culture of tech exploration.

Others

- **Student, Smart Professional College (10/2021 – 07/2024):** Completed IC3 Digital Literacy Certification (Levels 1 & 2) in Computing, Key Applications, and Living Online (Certiport & GMetrix).
- **Self-Taught Programmer, Independent Projects (2021 – 07/2024):** Built web-based tools including a Text-to-Speech generator for English exam practice; began coding in 9th grade.