

Almene De Meran MEGUIMTSOP

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RESEARCH INTERESTS

AI Evaluation and Red Teaming, LLM and Agentic AI Safety, AI Alignment, AI for Science, Responsible AI

EDUCATION

- **University of Colorado Boulder** Boulder, Colorado, USA.
Ph.D. student, Computer Science Aug. 2024 - Current
- **The Abdus Salam International Centre for Theoretical Physics** Trieste, Italy.
Postgraduate diploma, Quantitative life sciences Sep. 2023 - Aug. 2024
- **African Institute for Mathematical Sciences (AIMS)** Limbe, Cameroon.
M.S., Data Science, Grade: 3.5/4 Sep. 2022 - June 2023
- **University of Dschang** Dschang, Cameroon
M.S., Physics (Major: Electronics, Electrical Engineering, and Automation), Grade: 3.7/4 Oct. 2019 - July 2021

EXPERIENCE

- **Graduate Research Assistant** Aug. 2024 - Current
Computer Science Department, University of Colorado Boulder
 - Conduct research on fairness, disparities, and alignment in LLMs, with a focus on education and scientific workflows.
 - Review mitigation approaches grounded in research integrity, responsible AI, and global equity.
 - Develop benchmarks to evaluate the safety, reliability, and research integrity behavior of frontier LLMs, including Claude models, and agentic AI systems in scientific contexts.
 - Investigate mechanistic interpretability, model monitoring, and scalable oversight methods for understanding and mitigating failures in LLMs and agentic systems.
- **Graduate Teaching Assistant** Fall 2024, Spring 2026, Fall 2026
Computer Science Department, University of Colorado Boulder
 - **Fall 2026 (Machine Learning)**: Held office hours, assist in teaching sessions, and grade quizzes and exams.
 - **Spring 2026 (Intro to Data Science w/ Prob & Stats)**: Held office hours and answered student questions on Piazza; graded quizzes, assignments, and exams; mentored students on class projects.
 - **Fall 2024 (Intro to Computational Thinking)**: Led lab sessions introducing students to Python programming and data structures. Mentored students on class and group projects, providing guidance on problem-solving and coding practices.
- **Tutor** Spring 2026
African Institute for Mathematical Sciences (AIMS)
 - Mentored two AIMS students on essay projects in collaboration with their supervisor.
 - Provided research guidance on low-resource automatic speech recognition and Chichewa machine translation (MT) using traditional MT systems and LLMs.
- **Teaching Assistant, Physics** Nov. 2020 - May 2022
University of Dschang, Cameroon
 - Delivered tutorials in Optoelectronics to first-year Master's physics students and graded exams.
 - Led undergraduate physics laboratory sessions, guided students through experiments, and graded assignments.

SELECTED PROJECTS

- **Computational Analysis of Childhood Narratives on r/Guyana** Fall 2025
NLP for Cultural Analytics Project
 - Analyzed childhood narratives using a large corpus of Reddit dataset (Guyana dataset) using BERTopic, clustering, and supervised classification models to study how children describe parental experiences, with moral/value analysis.
- **Multi-Dataset Analysis for Robust Speech Emotion Recognition** Spring 2025
Deep Learning and Neural Network Project
 - Developed deep learning models for speech emotion recognition using merged RAVDESS, TESS, and CREMA-D datasets, comparing CNN, RNN, and CNN-RNN architectures for cross-dataset robustness.
- **Evaluating and Improving Reliability in Frontier AI Systems for Science** Ongoing
Current PhD Research Project
 - Developed a red-teaming benchmark and evaluation framework to assess frontier LLMs' compliance with research integrity norms across scientific scenarios.
 - Study the reliability of frontier LLMs and agentic AI systems, including multi-agent systems, using model monitoring and mechanistic interpretability to inform targeted interventions.

TECHNICAL SKILLS

- **Programming & Tools:** Python, R, React, C++, SQL, Github, Scripting.
- **Machine Learning:** Tensorflow, Tensorboard, OpenAI API, Anthropic API, OpenRouter, LLM evaluation and fine tuning, Prompt engineering.
- **Computer Vision Models:** CNN, OpenCV
- **Speech recognition:** Skilled in audioSegmentation, transformers, librosa, nltk, jiwer, and Levenshtein.
- **Languages:** English, French.
- **Others:** Webscrapping with Selenium, Linux, LaTeX.

SELECTED PUBLICATIONS & TALKS

P = Poster/Presentation, S = In Submission

- [S.1] **Meguimtsop, A. D. M.**, Ojukwu, C. E., Taechoyotin, P., Chávez-Ruelas, C., Burke, R., Clauset, A., and Acuna, D. E. “**The Disparate Beliefs of Large Language Models About Science and Scientists.**” *under review at the Proceedings of the National Academy of Sciences.*
- [S.2] **Meguimtsop, A. D. M.**, Pacheco, M. L., and Acuna, D. E. “**SciIntBench: Measuring LLM Compliance with Research Integrity Norms Under Adversarial Framing.**” *under review at the Association for Computational Linguistics Rolling Review.*
- [S.3] Taechoyotin, P., Tian, Y., **Meguimtsop, A. D. M.**, and Acuna, D. E. “**Do LLMs Know When Science Has Been Retracted? Evaluating Retraction Awareness for Trustworthy Science Automation**” *Under resubmission.*
- [S.4] Oduwole, M., Abdullahi, T., Olatunji, T., Katuka, G. A., Mgonzo, M., Okocha, C., Oko-Odion, T., Ezema, K., **Meguimtsop, A. D. M.**, and Ismaila, L. E. “**Audio Penalty: Evaluating Clinical Safety of Multimodal LLMs Across Text and Speech in Low-Resource Languages.**” *under review at the Association for Computational Linguistics Rolling Review.*
- [P.1] **Meguimtsop, A. D. M.**, Chávez-Ruelas, C., Taechoyotin, P., Burke, R., and Acuna, D. E. “**Disparities in Large Language Models for and About Science.**” Presented as a talk at the *Atlanta Conference on Science and Innovation Policy (ATLC 2025)*.
- [P.2] **Meguimtsop, A. D. M.** and Acuna, D. E. “**How Willing Are LLMs to Commit Scientific Fraud? A Study of 16 Commercial and Open Models.**” Presented as a talk at the *5th International Conference on the Science of Science and Innovation (ICSSI 2026)* and as a poster at the 2026 Machine Learning Summer School, NYC.

LEADERSHIP & SERVICE

Academic & Professional Service

2025 - Present

University of Colorado Boulder and Virtual

- Peer Reviewer: Humanities and Social Sciences Communications; International Conference on Computational Social Science (IC2S2); AAAI 2027 Program Committee; Deep Learning Indaba.
- Science judge: Undergraduate Research Expo; Eco-Innovation Challenge; Buckeye Science & Engineering Fair; Ohio Academy of Science Virtual Science Day; Texas DECA.

2026-2027 Newton Leadership Fellow

Fall 2026 - Spring 2027

Center for Leadership, University of Colorado Boulder

- Receive \$1500 in financial support and participate in exclusive leadership development experiences. Serve as a leadership ambassador for CU Boulder, representing student leadership on campus and beyond.

Computer Science Representative, Graduate Student Advisory Board (GSAB)

2026 - 2027

College of Engineering and Applied Science, University of Colorado Boulder

- Selected through a competitive process and appointed to represent Computer Science graduate students, advocate for departmental needs, and contribute to college-wide graduate student initiatives.

Lead, CU Café Program

Fall 2026 - Spring 2027

BioFrontiers Institute, University of Colorado Boulder

- Lead a graduate student and postdoc STEM community, organizing student-driven panels, faculty conversations, and professional development events.
- Recruit speakers and coordinate campus discussions on topics including AI ethics, equity in AI, and issues identified by the graduate research community.

Professional Development Chair, SMART Program

Summer 2026

Office of Graduate Access and Retention, University of Colorado Boulder

- Coordinated professional development sessions for undergraduate STEM researchers, working with graduate mentors, speakers, and panelists; mentored two research interns throughout the 10-week program.

Graduate School's Peer Mentor

2026 - 2027

College of Engineering and Applied Science, University of Colorado Boulder

- Help new students feel connected, supported, and prepared for academic success.

UE/Mentor, Partnerships for Informal Science Education in the Community (PISEC) Spring 2026 - Present

College of Arts and Sciences, University of Colorado Boulder

- Foster an inclusive learning environment that cultivates K-12 students' interest in STEM, supports a sense of belonging, and helps students develop scientific thinking through hands-on, inquiry-based activities.

Lead, Boulder Black Blossoms (BBB)

Fall 2025 - Spring 2026

Office of Graduate Access and Retention, University of Colorado Boulder

- Served as the lead of the BBB program, an initiative designed to uplift and highlight the achievements of Black women in STEM fields, through community-building initiatives that foster belonging, leadership, and peer support.

PROFESSIONAL MEMBERSHIPS

- Member, National Society of Black Engineers (NSBE)
- Member, Black in AI
- Member, Institute of Electrical and Electronics Engineers (IEEE)
- Member, IEEE (Computer Society; Women in Engineering)

HONORS, FELLOWSHIPS & AWARDS

Machine Learning Summer School NYC, 2026

June 2026.

Columbia University

- Selected through a highly competitive international application process; awarded a financial aid waiver for highly qualified admitted students.

MTSI & NSBE Denver Graduate Award

April 2026.

Denver Professionals Chapter of the National Society of Black Engineers

- Selected for a \$1,000 graduate award recognizing commitment to diversity, excellence, and impact in engineering and technical fields.

Distinguished Leadership Award

April 2026.

Office of Graduate Access and Retention, University of Colorado Boulder

- In recognition of peer-nominated excellence and meaningful contributions to the Boulder Black Blossoms community.

Conference Support and Publication Submission Award

May 2025.

Computer Science Department, University of Colorado Boulder

- Awarded \$2,000 in competitive funding to support PhD conference participation and publication efforts

Dean's and Departmental Excellence Fellowship

Aug. 2024.

Computer Science Department, University of Colorado Boulder

- \$4,000 in fellowship support for early-stage PhD research.

Early Career Professional Development Fellowship (ECPDF)

Aug. 2024.

Computer Science Department, University of Colorado Boulder

- \$1,000 in professional development support for early-stage PhD research.

ICTP postgraduate diploma, Fully funded scholarship

Sep. 2023 - Aug. 2024

Quantitative Life Sciences, Abdus Salam International Centre for Theoretical Physics (ICTP)

- Awarded a fully funded ICTP Postgraduate Diploma scholarship (~10 students per field), recognizing academic excellence.

Mastercard Foundation Scholarship Program at AIMS, Fully Funded

Sep. 2022 - June 2023

Data Science, African Institute for Mathematical Sciences (AIMS)

- Awarded the fully funded Mastercard Foundation Scholarship at AIMS (~ 15 selected from 60 AIMS scholars).

Data Science Africa summer school and workshop in Rwanda, Fully Funded

May 8 - May 12, 2023

Data Science Africa (DSA), Kigali, Rwanda

- Selected for the fully funded DSA summer school and workshop, an intensive program in machine learning and data science.

Presidential Excellence Award: four times successive recipient

2019 - 2022

Physics Department, University of Dschang

- The Presidential Excellence Award is a yearly grant from the President of the Republic of Cameroon to meritorious students in all the State universities in order to promote Academic Excellence.