Eric Nartey Onyame

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Advancing trustworthy AI with a focus on multilingual AI, AI safety, and multimodal learning. My goal is to develop models that are reliable and robust across languages and modalities, and that behave safely in ways that align with human values.

Education

University of Virginia — *Aug 2023 – Expected May 2028*
Ph.D. in Data Science — Charlottesville, VA
Advised by Dr. Chirag Agarwal — **GPA:** 3.95/4.0

The University of Tennessee at Chattanooga — *Aug 2021 – May 2023*
M.Sc. in Mathematics (Applied Mathematics) — Chattanooga, TN
Advised by Dr. Lakmali Weerasena — **GPA:** 3.80/4.0

University of Cape Coast — *Aug 2016 – Jul 2020*
B.Sc. in Mathematics with Economics — Cape Coast, Ghana
GPA: 3.76/4.0

Publications

* denotes equal contribution. Google Scholar.

1. **Eric Onyame***, Akash Ghosh*, Subhadip Baidya, Sriparna Saha, Xiuying Chen, Chirag Agarwal. *CURE-Med: Curriculum-Informed Reinforcement Learning for Multilingual Medical Reasoning*. Preprint: arXiv:2601.13262, 2026. arXiv. *Under review.*
2. **Eric Nartey Onyame**. *Covering Problem with Minimum Radius Enclosing Circle*. Master's thesis, Department of Mathematics, The University of Tennessee at Chattanooga, 2023. Thesis link. *398 downloads.*

Ongoing Projects

3. *The Robustness of Existing AI Monitors*. **Eric Onyame**, Chirag Agarwal. *In progress.*
4. *Counterfactual LLM Verifiers for Math and Logic Reasoning Tasks*. Elita Lobo, **Eric Onyame**, Yair Zick, Chirag Agarwal. *In progress.*

Awards and Honors

1. Quantitative Foundation Fellow, University of Virginia, 2023–2024.
2. Provost's Fellowship, University of Virginia, 2023–2024.
3. Best Mathematics Graduate Student Award, The University of Tennessee at Chattanooga, April 2023.
4. Inductee, Pi Mu Epsilon Mathematics Honor Society, The University of Tennessee at Chattanooga, April 2022.

Research Interests

1. **Multilingual AI:** Methods and evaluation pipelines that generalize across languages and produce consistent, high-quality outputs.
2. **AI Safety:** Monitoring and mitigating unsafe or misleading behavior, emphasizing interpretability and safety-focused evaluation.
3. **Multimodal AI:** Extending these questions beyond text to models that reason over multiple modalities while remaining robust to distribution shift.

Teaching

1. Deep Learning, Teaching Assistant
   University of Virginia Spring 2026
2. Research Methods in Data Science, Teaching Assistant
   University of Virginia Fall 2025
3. Decoding Large Language Models, Teaching Assistant
   University of Virginia Spring 2025
4. Data Engineering I: Data Management & Visualization, Teaching Assistant
   University of Virginia Fall 2024
5. Foundations of Data Science, Teaching Assistant
   University of Virginia Fall 2024
6. Elementary Statistical Analysis; College Algebra, Teaching Assistant
   The University of Tennessee at Chattanooga Aug 2021 – Jun 2022

Specialties

- **Trustworthy AI and Safety Evaluation:** Reliability and safety assessment, stress testing, and interpretable error analysis across languages.
- **RL for Reasoning and Alignment:** RL and preference optimization workflows to improve reasoning quality, robustness, and safe behavior.
- **Multilingual AI:** Cross-lingual generalization, consistency, and faithful generation for diverse languages.
- **LLM Training and Fine-Tuning:** PyTorch-based fine-tuning, data curation, scalable training, and systematic evaluation.
- **Statistical Modeling and Data Analysis:** Predictive modeling and inference in Python and R with strong foundations in probability and linear algebra.
- **Research Engineering:** Reproducible experimentation, ablations, documentation, and large-scale runs on HPC.

Technical Skills

- **Languages:** Python, R, Julia, JavaScript, SQL.
- **ML and Data:** PyTorch, scikit-learn, NumPy, Pandas, Matplotlib, PySpark.
- **Engineering and Tooling:** Git, Docker, LaTeX, Cloud computing.

Selected Talks and Presentations

1. Applications of Large Language Models
   School of Data Science, University of Virginia 2025

2. Mathematical Model and Algorithm to Identify a Hub Location
   UTC Spring Research and Arts Conference, The University of Tennessee at Chattanooga 2023

3. Covering Problem with Minimum Radius Enclosing Circle
   Master's Thesis Defense, The University of Tennessee at Chattanooga 2023

4. Application of the Smallest Enclosing Circle Problem to Healthcare Systems
   American Mathematical Society Southeastern Sectional Meeting 2022

5. Carotenoid Levels and Self-reported Fruit and Vegetable Intake: Differences Across Age, Race, Sex, and BMI
   National and Regional Food Industries (Student Research Presentation) 2022