

Uchenna Akujuobi, Ph.D.

Applied ML Scientist | Graph ML • LLMs & RAG • Knowledge Graph Reasoning

Barcelona, Spain • Canadian PR • Relocating to Ontario, Canada • **No sponsorship required**

+34 663 110 739 (WhatsApp) • akujuou@gmail.com • [LinkedIn](#) • [Google Scholar](#)

PROFILE

Applied ML Scientist with 9+ years of experience designing and building end-to-end machine learning systems, including 5+ years at Sony AI. My work spans graph neural networks, LLM fine-tuning, RAG pipelines, and knowledge-graph reasoning, with experience mentoring junior scientists and delivering systems to external partners. At Sony AI, I helped lead a biomedical hypothesis-generation platform built on millions of publications; 70% of its predictions were judged plausible by expert biologists, and 2 of 3 lab-tested predictions were confirmed in wet-lab experiments. I have published at NeurIPS, ACL, and IEEE TKDE, and am a named inventor on a published U.S. patent application.

TECHNICAL SKILLS

Languages	Python (expert), SQL, Bash
ML / DL	PyTorch (primary), TensorFlow, Keras, Hugging Face Transformers, scikit-learn
LLMs & NLP	LLM fine-tuning (PEFT/LoRA), RAG pipelines, embedding models, prompt engineering, evaluation
Graph ML	Graph Neural Networks (GCN, GAT, temporal GNNs), knowledge-graph reasoning, link prediction, node classification at millions-of-nodes scale
Infra & MLOps	Distributed training (multi-GPU / multi-node), model serving (vLLM), AWS (EC2, S3), Git, Linux, Docker
Research	Experiment design, ablation studies, offline evaluation, publication & peer review

PROFESSIONAL EXPERIENCE

Sony AI	Tokyo, Japan • Barcelona, Spain
<i>Senior Research Scientist</i>	2024–Present
<i>Research Scientist</i>	2020–2024

- **Built and delivered a biomedical hypothesis-generation system** processing millions of scientific publications, used in pilot/beta evaluation by an external partner for scientific discovery; 70% of model-proposed hypotheses judged plausible by expert biologists, and 2 of 3 lab-tested predictions confirmed by wet-lab experiments.
- **Served as technical lead** on the flagship hypothesis-generation program — a cross-functional effort with a manager, project manager, and 5 peer researchers — owning algorithmic direction, experiment planning, and technical decisions as the subject-matter expert on the problem.
- **Mentored 6+ interns and junior research scientists** through problem formulation, experiment design, engineering, and publication; co-authored 5+ peer-reviewed papers with mentees at NeurIPS, ACL, ECAI, and ICDM.
- **Designed graph ML architectures** (temporal GNNs, active curriculum learning, positive-unlabeled risk estimation) operating on biomedical knowledge graphs with millions of entities and tens of millions of edges; results published at NeurIPS and IEEE TKDE.
- **Developed LLM-powered components** for retrieval from large knowledge bases and structured-data reasoning, including fine-tuning and RAG-style pipelines integrated into internal prototypes and tools.
- **Advanced research from concept to production-oriented prototype** — formulated the problem, built the models in PyTorch, trained at scale across multiple GPUs, evaluated on realistic benchmarks, and partnered with engineering teams to integrate results into deployable tools.
- **Initiated the research direction** on knowledge-graph-based hypothesis generation during a 2019 internship, now a multi-year Sony AI program that produced a published US patent application, multiple peer-reviewed publications, and a system in pilot/beta evaluation with an external partner.

- **Published and presented** at NeurIPS, ACL, ECAI, ICDM, and AI4X; served on program committees for NeurIPS, AAAI, ECAI, and ICDM.

Sony Computer Science Laboratories

Research Intern, Machine Learning

Summer 2019

Tokyo, Japan

- Built the first graph-based hypothesis-generation prototype over millions of biomedical abstracts — work that became the foundation for a multi-year Sony AI research program, a published US patent application, and publications at NeurIPS and IEEE TKDE.
- Presented results to an interdisciplinary audience of AI researchers and biologists, translating model behaviour into actionable scientific insight.

King Abdullah University of Science and Technology

Graduate Teaching Assistant — Data Mining, Algorithms

2016–2019

Thuwal, Saudi Arabia

- Led weekly sections for 40+ graduate students per cohort; designed project materials, graded assignments, and evaluated capstone presentations.

EDUCATION

Ph.D., Computer Science (Artificial Intelligence) — King Abdullah University of Science and Technology
Sept. 2020

M.Sc., Computer Science (Artificial Intelligence) — King Abdullah University of Science and Technology
June 2016

B.Sc., Computer Engineering and Technology — Saint Petersburg State Electrotechnical University, Russia
June 2014

SELECTED PUBLICATIONS & PATENT

- **US Patent Application (filed & published).** *Method, Apparatus, and Computer-Readable Medium for Generating a Hypothesis from a Knowledge Graph.* US20250356221A1.
- **U. Akujuobi**, P. Kumari, J. Choi, S. Badreddine, K. Maruyama, S.K. Palaniappan, T.R. Besold. *Link Prediction for Hypothesis Generation: An Active Curriculum Learning Infused Temporal Graph-Based Approach (THiGER).* Artificial Intelligence Review, 2024.
- **U. Akujuobi**, S. Liu, T.R. Besold. *Revisiting Named Entity Recognition in Food Computing: Enhancing Performance and Robustness.* Artificial Intelligence Review, 2024.
- L. Cabello, **U. Akujuobi**. *It is Simple Sometimes: A Study On Improving Aspect-Based Sentiment Analysis Performance.* ACL 2024.
- J.C. Young, **U. Akujuobi**. *CERM: Context-aware Literature-based Discovery via Sentiment Analysis.* ECAI 2023.
- **U. Akujuobi**, J. Chen, M. Elhoseiny, M. Spranger, X. Zhang. *Temporal Positive-Unlabeled Learning for Biomedical Hypothesis Generation via Risk Estimation.* NeurIPS 2020.
- **U. Akujuobi**, M. Spranger, S.K. Palaniappan, X. Zhang. *T-PAIR: Temporal Node-Pair Embedding for Automatic Biomedical Hypothesis Generation.* IEEE TKDE, 2020.
- **U. Akujuobi** et al. *Collaborative Graph Walk for Semi-Supervised Multi-Label Node Classification.* ICDM 2019.

Full list: [Google Scholar](#). Program committee member / reviewer: NeurIPS, AAAI, ECAI, ICDM, EAAI, Artificial Intelligence Review, PLOS One.

LANGUAGES

English (native) • Igbo (native) • Russian (fluent) • Japanese (conversational)