Diane Tchuindjo

✉ dianetc@mit.edu
👤 Personal Website

Research Experience

Massachusetts Institute of Technology – ORC — Cambridge, MA
Advisor(s): Dr. Omar Khattab & Dr. Devavrat Shah — *Sep 2025 – Present*
- **Theory and Application of NLP Systems**: Research on developing and formalizing systems that can better process natural language at scale.
- **Content Moderation**: Previously developed novel techniques for the purposes of robust and efficient content moderation under imperfect human reviewers with Dr. Thodoris Lykouris, (*Aug. 2023 - May 2025*).

University of Maryland – Mathematics Department — College Park, MD
Research Assistant under Dr. Adam Kanigowski — *Aug 2021 – Jul 2022*

Microsoft – Quantum Architecture & Computing — Redmond, WA
Research Intern under Dr. Brad Lackey — *May 2019 – Aug 2019*

Work Experience

Independent — Remote
Software Engineering (Part-time/Contract) — *Aug 2021 – Aug 2023*
- **Hypothesis Testing**: Integrated property based testing into the *Sympy* library and implemented hypothesis test into the polynomial and number theory library.
- **Super-structured Data**: Fixed bugs and enhanced features on a novel data model that is a super–set of the standard relational and document models.
- **Uncertainty Quantification**: Identified regions of uncertainty and anomalies in complex and dynamic medical datasets using a proprietary data–oriented probabilistic ML platform.
- **Error Reduction**: Devised methodology to properly back–fill geographical data in Elasticsearch database to reduce the rate of information retrieval error on the user side from 5% to $\ll 0.5\%$.
- **Visualizations**: Created illuminating data dashboards to properly track and analyze user movement, behavior, and retention via sql queries in metabase.

Envieta Systems — Columbia, MD
Mathematician — *Jan 2021 – Jul 2021*
- **Computer Vision**: Utilized Detectron2 for instance segmentation, and developed classification tools for robotic package sorting.
- **Quantum Arithmetic**: Developed novel algorithms in the field of quantum arithmetic.

Apogee Research — Arlington, VA
Research Engineer — *Jan 2020 – Dec 2020*
- **Control Theory**: Applied stochastic control theory to object tracking & estimation and robust statistical methods to outlier detection and pattern discovery in noisy data.
- **Modeling**: Constructed testing models, visualizations, and prototypes primarily in Matlab, and (to a lesser extent) Java and Python .

Skills/Assets

- **Programming Languages**: Python, Go, Zig
- **OSS Contributions**: Sympy, Zed
- **Personal Projects**: Zigthesis

Preprints

Tchuindjo, D., Khattab O., (2025). Reasoning-Intensive Regression. NeurIPS Efficient Reasoning Workshop.

Education

Massachusetts Institute of Technology — Cambridge, MA
PhD Student, Operations Research — *Sep 2023 – Present*

University of Maryland — College Park, MD
BS, Mathematics & Economics — *Aug 2015 – Dec 2019*