

ADAKU UCHENDU

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EMPLOYMENT

MIT Lincoln Laboratory

Technical staff (AI Engineer/Researcher)

Lexington, MA

October 2023 - Present

EDUCATION

Pennsylvania State University

Ph.D. in Information Sciences and Technology

Thesis: *Reverse Turing Test in the Age of Deepfake Texts*

Advisor: Dr. Dongwon Lee

University Park, Pennsylvania

August 2018 - August 2023

University of Maryland Baltimore County

B.S. Mathematics | Minor: Statistics, **Honors:** Cum Laude

Thesis: *Numerical Simulation of Vibrations of Mechanical Structures*

Advisor: Dr. Bedrich Sousedik

Baltimore, Maryland

August 2014 - May 2018

SKILLS

Programming: Python, R, Matlab, Java, L^AT_EX, Maple

Tools: PyTorch, Tensorflow, Keras, Transformers

Applications: Git, Tableau, R Shiny

Operating Systems: Linux, Windows, MacOS

RESEARCH INTERESTS

NLP, LLMs, Cyber Security, Adversarial Robustness, Machine Learning, Topological Data Analysis

ACHIEVEMENTS, HONORS, AND AWARDS

Post-Graduate

Rising Star Award @ ICDM 2025 Undergraduate and High School Symposium

November 2025

EWM-EMS Summer School: Stability in Topological Data Analysis @ Sweden

July 2025

Associates Leadership Development Program with [The Partnership Inc.](#)

February-December 2025

Dagstuhl Seminar - Fair Division @ Germany

October 2024

11th Heidelberg Laureate Forum (HLF) @ Germany

September 2024

Graduate

Alfred P. Sloan Minority Ph.D. Scholarship (**\$40,000**)

January 2021 - August 2023

NSF SFS Scholarship (**\$34,000 annually**)

August 2020 - May 2023

Bunton-Waller Graduate Fellowship

August 2018 - May 2023

Diversity & Inclusion ICML 2022 & BlackinAI conference scholarship

July 2022

Diversity & Inclusion ACL 2022 conference Student Scholarship

May 2022

WiCyS Student Scholarship

September 2021, March 2022

CRA-WP Grad Cohort for Women

April 2021, 2022

ACM Richard Tapia Conference Student Scholarship

September 2020, 2021, 2022

CRA-WP URMD/IDEALS Student Scholarship

March 2020, 2022

TTO Student Travel Scholarship (£**1250**)

October 2019

Best Poster Presentation at ATRC internship

August 2019

Best Documentation at ATRC internship

August 2019

Undergraduate

Outstanding Tutor Award
Pi Mu Epsilon Mathematics Honors Society
Undergraduate Research Award Scholar (\$1500)
McNair Scholar

May 2018
May 2017 - May 2018
March 2017 - May 2018
January 2016 - May 2018

RESEARCH EXPERIENCE

Artificial Intelligence & Systems Group @ MIT Lincoln Lab — *Technical Staff (AI Researcher)*
Lexington, Massachusetts *October 2023 - Present*

- **NLP Research**

- Evaluated an Authorship Verification system under Authorship Obfuscation constraints - *Published at a workshop @ NAACL 2025*
- Evaluated the different deepfake texts detection techniques: watermarking vs. automatic detection
- Mentored a high school student (from IMSA) on watermarking for LLMs - *Published at a symposium @ ICDM 2025*

- **TDA + NLP Research**

- Surveyed the new and niche area of using Topological Data Analysis (TDA) to solve NLP tasks - *Paper under review*
- Currently exploring using TDA to interpret and optimize LLMs
- Currently mentoring Undergraduate students (from Harvey Mudd College) on using TDA to improve the transparency of LLMs

PIKE Research Lab @ Penn State — *Research Assistant* **University Park, Pennsylvania**

- **Research project:** Reverse Turing Tests *August 2018 - August 2023*
- **Description:** Built automatic and human-based approaches to accurately distinguish deepfake (LLM-generated) texts from human-written ones. Deepfake text generators include GPT-3, PPLM, LLaMA, Flan-T5, etc..
- Advisor: Dr. Dongwon Lee

Pacific Northwest National Lab — *NSIP Ph.D. Intern* **Richland, Washington (Virtual)**

- **Research project:** Analysis of Cybersecurity contract documents *May 2022 - August 2022*
- **Description:** Used NLP techniques to assess the coverage of cybersecurity contract-like vocabulary in the documents.
- Mentor: Dr. David McKinnon

IBM Research — *Ph.D. Research Intern* **San Jose, California (Virtual)**

- **Research project:** AutoML for NLP *May 2021 - August 2021*
- **Description:** Worked on an Automated AI model for text classification.
- Mentors: Dr. Sairam Gurajada & Dr. Alexandre Evfimievski

ATRC, Air Force Research Laboratory — *Research Assistant Intern* **Dayton, Ohio (Virtual)**

- **Research project:** Adversarial Robustness of Bayesian Neural Networks *May 2020 - October 2020*
- **Description:** Implemented an adversarially robust Deep learning model by incorporating Bayesian Inference.
- Mentors: Christopher Menart & Alexandra Hildenbrandt

ATRC, Air Force Research Laboratory — *Research Assistant Intern* **Dayton, Ohio**

- **Research project:** Reproducibility of the One-Pixel Attack *May 2019 - August 2019*

- **Description:** Studied the characteristics of the one-pixel adversarial attack and its robustness.
- Mentor: Alexandra Hildenbrandt

Federal Reserve Board — *IT intern*

Washington, D.C.

- **Research project:** Islamic vs. Non-Islamic banks
- **Description:** Investigated the Financial inclusion and growth of Islamic vs. Non-Islamic banks.
- Mentor: Dr. Nida Davis

May 2017 - August 2018

University of Maryland Baltimore County — *Research Assistant*

Baltimore, Maryland

- **Research project:** Numerical Simulation of Mechanical Structures
- **Description:** Researched the appropriate damping constant needed to reduce the oscillation of a simulated mechanical structure in MATLAB.
- Mentor: Dr. Bedrich Sousedik

February 2016 - May 2018

PREPRINTS

1. [arXiv'24] **Adaku Uchendu**, Thai Le, “Unveiling Topological Structures from Language: A Comprehensive Survey of Topological Data Analysis Applications in NLP,” *ArXiv Preprint*, November 2024 (*Under Review*)

PUBLICATIONS

** means equal contribution*

20. [ICDM-W'25] William Guo, Ana Smith, **Adaku Uchendu**, “Signature vs. Substance: Evaluating the Balance of Adversarial Resistance and Linguistic Quality in Watermarking Large Language Models,” *IEEE ICDM 2025 Undergraduate and High School Symposium (UGHS)*, November 2025 [**Rising Star Award**]
19. [IEEE-CS'26] Dominik Macko, Aashish Anantha Ramakrishnan, Jason Samuel Lucas, Robert Moro, Ivan Srba, **Adaku Uchendu**, Dongwon Lee “Beyond speculation: Measuring the growing presence of LLM-generated texts in multilingual disinformation,” *IEEE Computer Science Magazine*, July 2025
18. [NAACL-W'25] Kenneth Alperin, Rohan Leekha, **Adaku Uchendu**, Trang Nguyen, Srilakshmi Medarametla, Carlos Levy Capote, Seth Aycock, Charlie K. Dagli, “Masks and Mimicry: Strategic Obfuscation and Impersonation Attacks on Authorship Verification,” *The 5th International Conference on Natural Language Processing for Digital Humanities (NLP4DH) at NAACL 2025 Workshop*, May 2025
17. [NAACL'25] Ekaterina Artemova, Jason Lucas, Saranya Venkatraman, Jooyoung Lee, Sergei Tilga, **Adaku Uchendu**, Vladislav Mikhailov, “Beemo: Benchmark of Expert-edited Machine-generated Outputs,” *NAACL 2025*, Albuquerque, New Mexico, April 2025
16. [NAACL'25] Jooyoung Lee, Toshini Agrawal, **Adaku Uchendu**, Thai Le, Jinghui Chen, Dongwon Lee, “PlagBench: Exploring the Duality of Large Language Models in Plagiarism Generation and Detection,” *NAACL 2025*, Albuquerque, New Mexico, April 2025
15. [EMNLP'24] Dominik Macko, Robert Moro, **Adaku Uchendu**, Ivan Srba, Jason Lucas, Michiharu Yamashita, Nafis Irtiza Tripto, Dongwon Lee, Jakub Simko, Maria Bielikova “Authorship Obfuscation in Multilingual Machine-Generated Text Detection,” *EMNLP-Findings 2024*, Miami, FL, November 2024
14. [ECAI'24] **Adaku Uchendu**, Thai Le, Dongwon Lee, “TOPFORMER: Topology-Aware Authorship Attribution of Deepfake Texts with Diverse Writing Styles,” *ECAI (European Conference on Artificial Intelligence) 2024*, Santiago de Compostela, Spain, October 2024

13. [ACL'24] Nafis Irtiza Tripto, Saranya Venkatraman, Dominik Macko, Robert Moro, Ivan Srba, **Adaku Uchendu**, Thai Le, Dongwon Lee, "[A Ship of Theseus: Curious Cases of Paraphrasing in LLM-Generated Texts](#)," *ACL 2024*, Bangkok, Thailand, August 2024
12. [NAACL'24] Saranya Venkatraman, **Adaku Uchendu**, Dongwon Lee, "[GPT-who: An Information Density-based Machine-Generated Text Detector](#)," *NAACL-Findings 2024*, Mexico, June 2024
11. [EMNLP'23] Dominik Macko, Robert Moro, **Adaku Uchendu**, Jason Lucas, Michiharu Yamashita, Matúš Pikuliak, Ivan Srba, Thai Le, Dongwon Lee, Jakub Simko, Maria Bielikova, "[MULTITuDE: Large-Scale Multilingual Machine-Generated Text Detection Benchmark](#)," *EMNLP 2023*, Singapore, December 2023
10. [EMNLP'23] Nafis Irtiza Tripto, **Adaku Uchendu**, Thai Le, Mattia Setzu, Fosca Giannotti, Dongwon Lee, "[HANSEN: Human and AI Spoken Text Benchmark for Authorship Analysis](#)," *EMNLP-Findings 2023*, Singapore, December 2023
9. [EMNLP'23] Jason Lucas, **Adaku Uchendu**, Michiharu Yamashita, Jooyoung Lee, Shaurya Rohatgi, Dongwon Lee, "[Fighting Fire with Fire: The Dual Role of LLMs in Crafting and Detecting Elusive Disinformation](#)," *EMNLP 2023*, Singapore, December 2023
8. [HCOMP'23] **Adaku Uchendu***, Jooyoung Lee*, Hua Shen*, Thai Le, Kenneth Huang, Dongwon Lee, "[Does Human Collaboration Enhance the Accuracy of Identifying LLM-generated Deepfake Texts?](#)," *11th AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Delft, Netherlands, November 2023
7. [KDD Exp'23] **Adaku Uchendu**, Thai Le, Dongwon Lee, "[Attribution and Obfuscation of Neural Text Authorship: A Data Mining Perspective](#)," *ACM SIGKDD Explorations Newsletter*, Vol. 25(1), June 2023
6. [Web Conf'23] Fionda, V., et al., "[Tutorials at The Web Conference 2023](#)," In Companion Proceedings of the *ACM Web Conference 2023* (pp. 648-658), Austin, Texas, April 2023
5. [AIKE'21] **Adaku Uchendu**, Daniel Campoy, Christopher Menart, Alexandra Hildenbrandt. "[Robustness of Bayesian Neural Networks to White-Box Adversarial Attacks](#)," *IEEE Fourth International Conference on Artificial Intelligence and Knowledge Engineering (AIKE)*. IEEE, December 2021.
4. [EMNLP'21] **Adaku Uchendu**, Zeyu Ma, Thai Le, Rui Zhang, Dongwon Lee. "[TURINGBENCH: A Benchmark Environment for Turing Test in the Age of Neural Text Generation](#)," *Findings of the Association for Computational Linguistics: EMNLP 2021* (pp. 2001-2016), Punta Cana, Dominican Republic, November 2021
3. [EMNLP'20] **Adaku Uchendu**, Thai Le, Kai Shu, Dongwon Lee. "[Authorship Attribution for Neural Text Generation](#)," *In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, Virtual Event, November 2020
2. [TTO'19] **Adaku Uchendu**, Jeffrey Cao, Qiaozhi Wang, Bo Luo, Dongwon Lee. "[Characterizing Man-made vs. Machine-made Chatbot Dialogs](#)," *In Conference on Truth and Trust Online (TTO)*, London, UK, October 2019
1. [WebSci'19] Jialin Shao, **Adaku Uchendu**, Dongwon Lee. (2019). "[A Reverse Turing Test for Detecting Machine-Made Texts](#)," *In 11th International ACM Web Science Conference (WebSci)*, Boston, MA, July 2019

TUTORIALS

4. [NAACL'24] **Adaku Uchendu**, Saranya Venkatraman, Thai Le, Dongwon Lee, "[Catch Me If You GPT: Tutorial on Deepfake Texts](#)," *2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics*, Mexico City, Mexico, June 2024

3. [NSF Summit'23] Adaku Uchendu, Thai Le, Dongwon Lee, “[Catch Me If You GPT: Tutorial on Deepfake Texts](#),” *2023 NSF Cybersecurity Summit for Large Facilities and Cyberinfrastructure* at Lawrence Berkeley National Laboratory, Berkley, California, October 2023 (*Training/Workshop*)
2. [Web Conf'23] Adaku Uchendu, Thai Le, Dongwon Lee, “[Catch Me If You GAN: Generation, Detection, and Obfuscation of Deepfake Texts](#),” *ACM Web Conference (WWW)*, Austin, Texas, April 2023
1. [INLG'22] Adaku Uchendu, Vladislav Mikhailov, Jooyoung Lee, Saranya Venkatraman, Tatiana Shavrina, Ekaterina Artemova. “[Tutorial on Artificial Text Detection](#),” *The 15th International Conference on Natural Language Generation (INLG): Tutorial*, Maine, July 2022

THESES

2. Adaku Uchendu. (2023). [Reverse Turing Test in the Age of Deepfake Texts](#). Ph.D. Dissertation, College of Information Sciences and Technology, Pennsylvania State University, PA, USA. 2023.
1. Adaku Uchendu. (2017). [Numerical Simulation of Vibrations of Mechanical Structures](#). Senior Thesis, Department of Mathematics and Statistics, University of Maryland Baltimore County (UMBC), MD, USA. 2018. [\[slides\]](#)

INVITED TALKS, PANELS, AND POSTERS

1. [TALK] *Topological Data Analysis for NLP*, at Harvard's Graduate course - **Strategic Business Analytics** (taught by Dr. Alexis Montecinos Bravo), Virtual, December 11, 2025.
2. [TALK] *Possibilities and Pitfalls of AI: Career and Research Talk*, at MIT Introduction to Technology, Engineering, and Science (MITES)'s **Saturdays Fall Symposium**, Cambridge, Massachusetts, November 22, 2025.
3. [TALK] *Unveiling Topological Structures from Language: A Comprehensive Survey of Topological Data Analysis Applications in NLP*, at the 2025 Sloan Scholars Mentoring Network (SSMN) **Research Symposium**, Atlanta, Georgia, October 29-30, 2025.
4. [PANEL] Served on a panel for MIT Lincoln Lab's Early Career ERG (Employee Resource Group) *Early Career*, Lexington, MA, August 26, 2025
5. [POSTER] *Unveiling Topological Structures from Language: A Comprehensive Survey of TDA Applications in NLP*, at The Geometric Realization of AATRN (Applied Algebraic Topology Research Network), **Poster**, Chicago, Illinois, August 19, 2025.
6. [TALK] *Unveiling Topological Structures in Text & Speech*, at the 39th Summer Topology and Its Applications Conference, **Topology and Computing special session**, Mobile, Alabama, August 12, 2025.
7. [PANEL] Served on a virtual panel for UMBC McNair's *Let's Talk Grad School (LTGS) #3: Careers After Graduate School*, Virtual, March 8, 2025
8. [TALK] *Authorship Obfuscation in the Age of Large Language Models*, at MIT Lincoln Lab's Black Experience ERG, **Black History Month series**, Lexington, MA, February 4, 2025.
9. [PANEL] Invited to serve on a virtual panel of professionals to speak to [USM LSAMP](#) Summer Research Fellows about career pathways. Virtual, July 22, 2024.
10. [TALK] *Attribution and Obfuscation of Deepfake Text Authorship*, at Cohere for AI (Geo Regional Africa Group), **Research Guest Speaker**, Virtual, May 14, 2024. [\[Video\]](#)
11. [TALK] *Attribution and Obfuscation of Deepfake Texts*, at St. George's University, Grenada, **Invited Lecture**, Virtual, February 15, 2024.

12. [TALK] *Detection and Obfuscation of Deepfake Texts*, at MIT Lincoln Laboratory's fourth Recent Advances in Artificial Intelligence for National Security (RAAINS) workshop, **Student Lightning talk**, Lexington, MA, November 16, 2022.
13. [TALK] *Attribution and Obfuscation of Neural Text Authorship*, at Dublin City University, Ireland, **NLP Seminar**, Virtual, October 10, 2022
14. [POSTER] *TuringBench*, at Pan-APA 5th Annual Conference at The Pennsylvania State University, University Park, PA, April 9, 2022.
15. [TALK] *Reverse Turing Test in the Age of Neural Text Generation*, at the National Institute of Standards and Technology (NIST), Information Technology Laboratory, **Software and Systems Division**, Virtual, February 10, 2022.
16. [TALK] *Reverse Turing Tests for Distinguishing AI-generated texts from Human-written texts*, at National Institute of Standards and Technology (NIST), **Applied and Computational Mathematics Division (ACMD)** Seminar Series, Virtual, May 25, 2021. [Online post]

TEACHING EXPERIENCES

Pennsylvania State University Teaching Assistant

State College, Pennsylvania
January 2019 - May 2019

- Worked as a Teaching Assistant in a Security and Risk Analysis course.
- Assisted students with the use of Excel and R, graded and held office hours.

REU Lab Tutor

May & June 2021

- Designed and instructed the lab on LaTeX, Overleaf, and AI text-generation

University of Maryland Baltimore County Math Lab Tutor

Baltimore, Maryland
September 2015 - May 2018

- Tutored the following courses: College Algebra, Pre-calculus, Calculus I, Calculus II, Calculus III, Linear Algebra, and Differential Equations.

Math Learning Assistant (LA)

August 2016 - December 2016

- Assisted students in Pre-Calculus.
- Held weekly discussion sessions and office hours.
- Presented and graded the students with a weekly individual quiz.

PROFESSIONAL & ACADEMIC SERVICES

- **Senior Area Chair**
 - EMNLP 2025
 - ACL ARR May 2025
- **Area Chair**
 - 2025 Feb. ACL RR (for ACL 2025)
 - DSAA 2025
- **Program Committee Member**
 - The First Workshop on Efficient Benchmarking in NLP (NLP Power) at ACL 2022
 - ECAI 2024 conference
 - Workshop on *Detecting AI Generated Content* @ COLING 2025
 - NAACL-HLT/ACL/EMNLP Tutorials 2025
 - ECAI 2025 conference
 - RANLP 2025 conference
 - Synthetic & Adversarial ForEnsics (SAFE) 2026 Workshop @ WACV

- **Conference Reviewer**
 - 2024, 2025 ACL Rolling Review
 - 2024, 2025 ACM Richard Tapia conference
- **Session Chair**
 - *Crowd Modeling and Optimization* Session at AAAI HCOMP 2023
- **Journal Reviewer**
 - Social Network Analysis and Mining (SNAM)
 - Language Resources and Evaluation (LREV)
 - Journal of Artificial Intelligence (AIJ)
 - Nature Human Behaviour
- **Organizing Committee**
 - The 2023 6th Annual Pan-APA conference @ Penn State
- **Executive Staff for Organizations**
 - 2019-2020 Graduate Student Association in IST, Penn State (Treasurer)
 - 2022-2023 Penn State Pan-African Professional Alliance (IT Officer)

MENTORING EXPERIENCE

- UMBC Reach Initiative (September 2017 - May 2018)
 - Provided STEM exposure and professional development for Baltimore high school girls
- UMBC Summer 2021 McNair students (through *2021 McNair Alumni Mentor*) - 2021
- Nafis Irtiza Tripto (Ph.D. student @ Penn State's PIKE lab) on *Authorship Attribution & Verification* - 2022-2023
- Jason Lucas (Ph.D. student @ Penn State's PIKE lab) on *Multilingual Fake News detection* - 2022-Present
- William Guo (High school student @ Illinois Mathematics and Science Academy) on *Watermarking LLMs* - 2024-2025
- Five students (Undergraduate students @ Harvey Mudd College (Research clinic)) on *Using Topology to Interpret and Characterize Neural Networks* - 2025-2026

PRESS COVERAGE

- [“Telling AI from Human: DeepFake Texts in the era of Large Language Models. Tutorial Notes @NAACL 2024,”](#) [Jinghong Chen’s Blog Post](#), June 2024
- [“Where are they now?,”](#) [UMBC’s Department of Mathematics and Statistics](#), 2023.
- [“Is AI the Future of Content Generation?,”](#) [Bloggers Insights](#), August 2021.
- [“Five top technology trends from 2021 that are here to stay,”](#) [Ericsson Blog](#), June 2021.
- [“Finance’s Embrace Of AI-Generated Writing,”](#) [Robot Writers AI](#), March 2021.
- [“Researchers test detection methods for AI-generated content,”](#) [Penn State News](#), February 2021.
- [“Siblings pursue parallel doctoral degrees,”](#) [Penn State News](#), August 2020.
- [“Adaku Uchendu to extend passion for mathematics through information sciences Ph.D. at Penn State,”](#) [UMBC News](#), April 2018.