

Jason Lucas

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EDUCATION

THE PENNSYLVANIA STATE UNIVERSITY

PH.D. IN INFORMATICS

Con. Data Science and AI

GPA: 3.91

Aug. 2021 - May 2026 | University Park, PA

ST. GEORGE'S UNIVERSITY

MASTER OF PUBLIC HEALTH

Epidemiology

GPA: 3.83

Jan. 2018 - May 2021 | Grenada, WI

BOSTON UNIVERSITY

M.S.C. IN COMPUTER INFO. SYS.

Health Informatics

GPA: 3.64

Jan. 2012 - Sept. 2014 | Boston, MA

ST. GEORGE'S UNIVERSITY

B.S.C. IN INFORMATION TECHNOLOGY

GPA: 3.64

Aug. 2007 - May 2010 | Grenada, WI

PENN STATE LINDIV

LINGUISTICS & LANGUAGE SCIENCE

Certificate

Aug. 2022 - present | University Park, PA

SKILLS

AI/ML

- NLP • Deep Learning • LLMs • RAG
- Transfer Learning • Prompt Engineering
- Reasoning • Evaluation

PROGRAMMING

- Python • SQL • PyTorch • R • \LaTeX
- C++ • Java • HTML • CSS • PHP
- Shell Scripting • TensorFlow

DATA SCIENCE

- Data Wrangling • Feature Engineering
- Visualization • Web Scrapping
- Predictive Analytics • Statistical Analysis

PLATFORMS/TOOLS

- HuggingFace • VSCode • Google Colab
- AdapterHub • EpilInfo • GeoDa • SAS
- Oracle • MSSQL • GitHub • GCP • Azure
- vLLM

TRANSFERABLE

- Scientific Writing • Grant Writing
- Project Management • Technical Training

RESEARCH AREA

Multimodal & Agentic AI

Low-Resource Multilingual NLP

Adversarial ML & Safe AI

Model Adaptation and Alignment Tuning

Harmful Content Generation & Detection

LLM, LRM, MLLM & Hallucination

EXPERIENCE

THE PENNSYLVANIA STATE UNIVERSITY | GRADUATE ASSISTANT

Aug. 2021 - Present | PA, US

- Research Assistant

- Leads ML/NLP research under **Dr. Dongwon Lee** stewardship for combating harmful content (e.g., disinformation and deepfakes) across 70+ languages, modalities, and distribution gaps
- Mentors 5+ research interns, assists advisor with grant writing, and yields 6 top-tier publications (180+ citations) in ACL, EMNLP, NAACL, COLING, and IEEE venues
- Develop end-to-end pipelines using PyTorch, vLLM, Hugging Face, AdapterHub, and APIs (e.g., OpenAI, Anthropic, Cloudbank: Azure, Google Cloud Platform)
- Apply transfer learning (fine-tuning), prompt engineering, contextual AI learning, RAG & Agentic AI approaches for multilingual threat detection, adversarial attacks/robustness, multi-modal data generation, translation, & human studies, automatic evaluation.

- Teaching Assistant

- Managed course delivery, assessments, office hours, feedback & attendance for 3 computing classes (150+ students). Database Systems, Application Development, & Human AI Robotics Interactions
- Enhanced student engagement 40% through innovative teaching approaches

- NSF NRT Fellow

- Leads interdisciplinary & transdisciplinary AI research through **LINDIV** with \$9K NSF grant funding
- Collaborate with 10+ diverse researchers across 5 departments, advancing human-AI interaction

ST. GEORGE'S UNIVERSITY | FACULTY

June 2011 – July 2021 | Grenada, WI

- Instructor, Head of Division & Technical Lead

- Led 6-person team supporting 4000+ medical students across 3 school terms
- Achieved 99.0% uptime managing SimCapture/Examsoft evaluation platforms
- Taughts 3+ courses across IT, Medicine, and Public Health programs

GOVERNMENT OF GRENADA | INFORMATION TECHNOLOGY INSTRUCTOR

Aug 2010 – Jul 2011 | Grenada, WI

- Supervise class & managed IT infrastructure for 500+ students.
- Achieved 95% pass rate in CSEC IT examinations through targeted instruction
- Implemented digital literacy program reaching 300+ students

INTERNSHIP

05/19/2025 Lawrence Livermore National Lab • NLP, LLM, LRM, MLLM, Safe AI, Reasoning, MoA Interaction LLC • NLP, IVA, LLMs, Prompt Engineering, Con. AI, Dia. Summarization

05/01/2024 Coalfire • AI for Cybersecurity, Security Compliance and Standard, SOC, PCI

05/01/2023 Flow Grenada (LIME: Cable & Wireless) Networking, Mobile Tech, Database, IT Supp.

02/01/2010 02/01/2010

AWARD

2024 Pan-African Professional Alliance Leadership, PSU

2018 Chancellor's List for Academic Excellence, MPH

2012 Excellence and Dedication to OSCE, SGU

2009 Dean's List for Academic Excellence, B.Sc

2008 Chancellor's List for Academic Excellence, B.Sc

FELLOWSHIP

2022-24 Linguistic Diversity Across the Lifespan, National Science Foundation.

2021-22 Funds for Excellence in Graduate Recruitment, Penn State University.

2018-20 Graduate Faculty Fellowship, St. George's University

2007-10 Undergraduate Scholarship, Government of Grenada.

SERVICE

- Committee Member • MASC-SLL '25
- Committee Member • COLING '24
- Committee Member • IST GBoR'24
- Peer Reviewer • ACL'23, 24, 25
- IT Officer • Pan-African Prof. Alliance' 23
- President • Graduate Student Assc' 22.
- Outreach Coordinator • LinDiv' 22
- Volunteer • EMNLP Volunteer' 23
- IT Officer • Red Cross Grenada' 20

MENTORSHIP

- 1 • CRA UR2PhD Grad
- 2 • Millennium Scholars
- 3 • Penn State Undergraduate

RELEVANT COURSES

- Interdisciplinary Research** -IST PSU
 - Data Mining • Social Informatics
 - Human Computer Interactions
- Transdisciplinary Research** -LinDiv
 - Generative Syntax • Linguistics
 - Transdisciplinary Team Research
- Multilingual NLP** -CLS & IST PSU
 - Transfer Learning • Prompt Engineering
 - Adversarial ML & DL • Generative AI
 - Conversational AI • Reasoning
 - Mixture-of-Agents
- Epidemiology** -SGU
 - Data Management & Analysis
 - Chronic & Infectious Disease Epi
- Health Informatics** -BU
 - Advance Health Informatics

INVITED TALKS

- Munich NLP •2025
- WXXI News NPR •2024
- Cohere For AI •2024
- St. George's University •2023
- CRA-WP IDEALS •2023

TEACHING EXPERIENCE

- Applied Generative AI •2025
- Human, Robotics & AI in Action •2025
- Organization of Data •2022
- Application Development •2021
- Health Informatics •2016
- Database System •2010

SELECTED PUBLICATIONS

Conference Publications [240 citations]

- [1] Jason Lucas, John Chen, Ali Al-Lawati, Mahjabin Nahar, and Mahnoosh Mehrabani. Chain-of-Interactions: Iterative ICL Framework for Abstractive Task-Oriented Dialogue Summarization of Conversational AI Interactions. In *EMNLP Findings*, 2025.
- [2] Ali Al-Lawati, Jason Lucas, Zhiwei Zhang, Prasenjit Mitra, and Suhang Wang. Graph-based Molecular In-context Learning Grounded on Morgan Fingerprints. In *EMNLP Findings*, 2025.
- [3] Ekaterina Artemova, Jason Lucas, Saranya Venkatraman, Jooyoung Lee, Sergei Tilga, Adaku Uchendu, and Vladislav Mikhailov. Beemo: Benchmark of Expert-edited Machine-generated Outputs. In *NAACL Main Conference*, 2025.
- [4] Ali Al Lawati, Jason Lucas, and Prasenjit Mitra. Semantic Captioning: Benchmark Dataset and Graph-Aware Few-Shot In-Context Learning for SQL2Text. In *COLING Main Conference*, 2025.
- [5] Dominik Macko, Robert Moro, Adaku Uchendu, Ivan Srba, Jason Lucas, Michiharu Yamashita, Nafis Irtiza Tripto, Dongwon Lee, Jakub Simko, and Maria Bielikova. Authorship Obfuscation in Multilingual Machine-Generated Text Detection. In *EMNLP Findings*, 2024.
- [6] Jason Lucas, Adaku Uchendu, Michiharu Yamashita, Jooyoung Lee, Shaurya Rohatgi, and Dongwon Lee. Fighting Fire with Fire: The Dual Role of LLMs in Crafting and Detecting Elusive Disinformation. In *EMNLP Main Conference*, 2023.
- [7] Dominik Macko, Robert Mora, Adaku Uchendu, Jason Lucas, Michiharu Yamashita, Matúš Pikuliak, Ivan Srba, Thai Le, Dongwon Lee, Jakub Simko, and Maria Bielikova. MULTiTDE: Large-Scale Multilingual Machine-Generated Text Detection Benchmark. In *EMNLP Main Conference*, 2023.
- [8] Jason Lucas, Limeng Cui, Thai Le, and Dongwon Lee. Detecting False Claims in Low-Resource Regions: A Case Study of Caribbean Islands. In *ACL Workshop on Combating Online Hostile Content*, 2022.

Journal Publications [20 citations]

- [9] Dominik Macko, Aashish Anantha Ramakrishnan, Jason Lucas, Robert Moro, Ivan Srba, Adaku Uchendu, and Dongwon Lee. Beyond speculation: Measuring the Growing Presence of LLM-generated texts in Multilingual Disinformation. *IEEE Computer*, 2026. [Accepted].
- [10] Jason Lucas, Maung Maung Barani, Tabar Maryam, McBride Keegan, and Lee Dongwon. The Longtail Impact of Generative AI on Disinformation: Harmonizing Dichotomous Perspectives. *IEEE Intelligent Systems*, 2024.
- [11] Maung Maung Barani, McBride Keegan, Jason Lucas, Tabar Maryam, and Lee Dongwon. Generative AI Disproportionately Harms Long Tail Users. *IEEE Computer*, 2024.

SELECTED PROJECTS

NLP & APP DEV. RESEARCH PROJECTS | PENN STATE UNIVERSITY LINDIV NSF NRT Lead Researcher & App Developer | 2023 - Present

- BABSANT: AI-Powered Speech Pathology Platform
 - Engineered multilingual AI platform with GPT-4 & Whisper for speech pathology across 5+ languages
 - Built Streamlit interface, reducing assessment time by 60% with 98% accuracy through in-context learning
- Intelligent Virtual Assistant for Customer Service
 - Developed novel summarization approach for customer service task-oriented dialogue in real-world settings
 - conduct human study and boosted large and small LLM quality and accuracy by 70% for conversational AI systems using LLMs
- Scientific Reasoning for Multilingual AI
 - Developed novel approaches to improve mathematical reasoning across LRM and LLMs in low-resource multilingual settings
 - Implemented agentic AI mixture of agents framework for enhanced scientific reasoning capabilities

MEDICAL INFORMATICS | ST. GEORGE'S UNIVERSITY Technical Lead & Project Manager | 2019 - 2021

- Online Clinical Evaluation Exercise (OCEX)
 - Led virtual clinical examination system for 3000+ students with 5-platform integration
 - Accelerated processing by 40% while achieving 98% satisfaction rating
- B-Line SimLab Expansion
 - Managed B-Line Medical lab expansion serving 4K+ students annually
 - Led 15-member cross-departmental team, increasing capacity by 250%