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.SC. IN COMPUTER INFO. SYS.
Health Informatics
GPA: 3.64
Jan. 2012 - Sept. 2014 | Boston, MA

ST. GEORGE'S UNIVERSITY
B.SC. 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 • EpiInfo • 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
05/01/2024	**Interaction LLC** • NLP, IVA, LLMs, Prompt Engineering, Con. AI, Dia. Summarization
05/01/2023	**Coalfire** • AI for Cybersecurity, Security Compliance and Standard, SOC, PCI
02/01/2010	**Flow Grenada** (LIME: Cable & Wireless) Networking, Mobile Tech, Database, IT Supp.

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

Interdesciplinary Research -IST PSU
• Data Mining • Social Informatics
• Human Computer Interactions
Transdesciplinery Research -LinDiv
• Generative Syntax • Linguistics
• Transdesciplinery 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 [172 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 Moro, Adaku Uchendu, **Jason Lucas**, Michiharu Yamashita, Matúš Pikuliak, Ivan Srba, Thai Le, Dongwon Lee, Jakub Simko, and Maria Bielikova. **MULTITuDE: 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 [11 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 LRMs 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%