



# Jason S. Lucas

PH.D STUDENT · DATA & AI, HEALTH, & PUBLIC HEALTH INFORMATICS SPECIALIST

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*"Using artificial intelligence to solve leading cybersecurity and health problems, I embody the expanding human concept that drives the greatest 21st-century innovations."*

## Summary

Information technology and medical education expert with over 10 years of experience. Currently a Research Assistant at Penn State's PIKE Research Lab, leveraging my unique interdisciplinary background across linguistics, artificial intelligence, cybersecurity, public health, and human language technology. Passionate about solving leading societal problems through innovative Natural Language Processing approaches with large language models. Core research focuses on advancing cutting-edge NLP techniques and model alignment for combating low-resource, multilingual, cross-lingual, multi-domains, multi-location, long-tail, in and out-of-distribution dis/misinformation.

## Education

### Ph.D. in Informatics (Data Science and AI)

PENNSYLVANIA STATE UNIVERSITY

- Topic: Combating Multilingual and Cross-lingual Dis/Misinformation
- Advisor: Dr. Dongwon Lee

University Park, PA

Aug. 2021 - Present

### MPH (Epidemiology)

ST. GEORGE'S UNIVERSITY

- Capstone: Effects of Self-Care Apps in Prediabetics in Grenada
- Advisor: Dr. Emanuel Keku

St. George's, GD

Jan. 2018 - Aug. 2020

### M.Sc. in Computer Information Systems (Health Informatics)

BOSTON UNIVERSITY

Boston, MA

Jan. 2012 - Sep. 2014

### B.Sc. in Information Technology, cum laude

ST. GEORGE'S UNIVERSITY

- Information Systems Project: Azure Medical Web-based Application
- Advisor: Dr. Emanuel Keku

St. George's, GD

Jan. 2007 - May 2010

### A.S. in Information Technology

T.A. MARRYSHOW COMMUNITY COLLEGE

St. George's, GD

Aug. 2005 - Jul. 2007

### Graduate Certificate (NSF Linguistic Diversity Across the Lifespan (LINDIV) )

PENNSYLVANIA STATE UNIVERSITY

University Park, PA

Aug. 2022 - Aug. 2024

## Publications

[ACL'22] **Jason Lucas**, Limeng Cui, Thai Le, and Dongwon Lee. 2022. **Detecting False Claims in Low-Resource Regions: A Case Study of Caribbean Islands**. In Proceedings of the Workshop on Combating Online Hostile Posts in Regional Languages during Emergency Situations, pages 95–102, Dublin, Ireland. Association for Computational Linguistics (ACL).

[EMNLP '23] **Jason Lucas**, Adaku Uchendu, Michiharu Yamashita, Jooyoung Lee, Shaurya Rohatgi, and Dongwon Lee. 2023. **Fighting Fire with Fire: The Dual Role of LLMs in Crafting and Detecting Elusive Disinformation**. Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP). Singapore. Association for Computational Linguistics.

[EMNLP '23] Dominik Macko, Robert Moro, Adaku Uchendu, **Jason Samuel Lucas**, Michiharu Yamashita, Matúš Pikuliak, Ivan Srba, Thai Le, Dongwon Lee, Jakub Simko, and Maria Bielikova. 2023. **MULTITuDE: Large-Scale Multilingual Machine-Generated Text Detection Benchmark**. Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP). Singapore. Association for Computational Linguistics.

## Academic Achievements & Awards

### FELLOWSHIPS & SCHOLARSHIPS

|      |  |                     |
|------|--|---------------------|
| 2023 | <b>NSF Research Traineeship</b> , 2023 NSF NRT Research Research Traineeship Student Scholarship                       | Tempe, AZ           |
| 2023 | <b>CRA-WP IDEALS</b> , Computer Research Association Grad Cohort for IDEAL Student Scholarship                         | Honolulu, HI        |
| 2022 | <b>NSF LINDIV</b> , Linguistic Diversity Across the Lifespan Graduate Fellowship                                       | University Park, PA |
| 2022 | <b>ICLM &amp; Black in AI</b> , International Conference on Machine Learning Diversity & Inclusion Student Scholarship | Baltimore, MD       |
| 2022 | <b>ACL</b> , Association for Computational Linguistics Diversity & Inclusion Student Scholarship                       | Dublin, IRL         |
| 2021 | <b>PSU FEGR</b> , Penn State University Funds for Excellence in Graduate Recruitment Fellowship                        | University Park, PA |
| 2018 | <b>SGU Graduate Fellowship</b> , St. George's University Graduate Fellowship   | St. George's, GD    |
| 2007 | <b>SGU Student Scholarship</b> , St. George's University Undergraduate Student Scholarship                             | St. George's, GD    |

## AWARDS

|      |   |                  |
|------|---|------------------|
| 2018 | <b>MPH</b> , Chancellor's List for Academic Excellence                                    | St. George's, GD |
| 2012 | <b>Job Award</b> , Excellence and Dedication to Objective Structured Clinical Examination | St. George's, GD |
| 2013 | <b>B.Sc.</b> , Dean's List for Academic Excellence  | St. George's, GD |
| 2013 | <b>B.Sc.</b> , Chancellor's List for Academic Excellence                                  | St. George's, GD |

## Presentations

### National Science Foundation

Tempe, AZ

PRESENTER FOR < NATIONAL SCIENCE FOUNDATION RESEARCH TRAINEESHIP>

Oct. 2023

- Delivered a poster presentation on the impacts of native accent variant processing on human language technology: Integrating linguistic, psychological, and AI approaches.

### National AI Institute for Exceptional Education

University Park, PA

PRESENTER FOR < NATIONAL SCIENCE FOUNDATION AND THE INSTITUTE OF EDUCATION SCIENCES AI RESEARCH INSTITUTES>

Sep. 2023

- Delivered a talk on AI Transforming Education for Children with Speech and Language Pathologies

### Pan-APA 6th Annual Conference

University Park, PA

PRESENTER FOR <BUILDING A RESILIENT FUTURE FOR AFRICA IN THE POST COVID WORLDe>

Apr. 2023

- Introduced the first case study on detecting false claims in the Caribbean islands, a low-resource language region.
- Discuss the challenges and future research directions for combating multilingual long-tail fake news.

### Computing Research Association Grad Cohort Workshop for IDEALS Skills

Honolulu, HI

PRESENTER FOR <2023 GRAD COHORT FOR IDEALS LIGHTNING TALK>

Mar. 2023

- Delivered a lightning talk on Detecting False Claims in Low-Resource Regions: A Case Study of Caribbean Islands

### ACL 2022, 60th Annual Meeting of the Association for Computational Linguistics

Dublin, IRL

PRESENTER FOR <COMBATING ONLINE HOSTILE POSTS IN REGIONAL LANGUAGES DURING EMERGENCY SITUATION>

May. 2022

- Presented the Paper: Detecting False Claims in Low-Resource Regions: A Case Study of Caribbean Islands
- Discussed future work on low-resource language processing to Combat COVID-19 Related Online Hostile Content

## Research Experience

### PIKE Research Lab.

Penn State University

GRADUATE RESEARCH ASSISTANT

Aug. 2021 - Present

- Research Project:** SysFake
- Description:** SysFake focuses on innovating superior ML and DL models for fake news detection. My research leverages LLM, multi-, and cross-lingual NLP to tackle low-resource and out-of-distribution fake news across languages, domains, and countries.
- Advisor:** Dongwon Lee
- Projects:** : C-Transfer, F3, X-GEN, GREENLAND

## Teaching Experience

### IST 140: Introduction to Application Development

Penn State University

GRADUATE TEACHING ASSISTANT

Aug. 2021 - Dec.

- Teaching assistant for an introductory course in programming principles using Java
- Assisted students in using IntelliJ and understanding programming concepts
- Graded assignments/exams and held office hours for student support

### IST 210: Organization of Data

Penn State University

GRADUATE TEACHING ASSISTANT

Aug. 2021 - Dec.

- Teaching assistant for database course teaching fundamental concepts
- Assisted students in using Microsoft SQL, conceptualizing concepts, and practical skills
- Graded assignments/exams and held office hours for student support

## BPM II: Basic Principles of Medicine

### INSTRUCTOR

- Served as a lecturer for Introduction Biomedical Informatics
- Developed exam questions and conducted office hours for student support

St. George's University

Jan. 2021 - Jun.2021

## PUBH 302: Public Health

### INSTRUCTOR

- Served as a lecturer for Introduction to Health Informatics
- Developed exam questions and conducted office hours for student support

St. George's University

Aug. 2020 - Jun.2021

## COMP 420: Database Systems

### ADJUNCT ASSISTANT PROFESSOR

- Served as a lecture for an advanced database system course
- Developed exam questions and course material
- Lectured and conducted practical labs sessions
- Graded assignments/exams and provided feedback
- Conducted office hours for student support

St. George's University

Aug. 2010 - Dec. 2011

## Information Technology

### CERTIFIED TEACHER I

- Taught Information Technology at The Anglican High School
- Developed exam questions and class materials
- Managed IT lab and conducted practical labs sessions
- Graded assignments/exams and provided feedback
- Take students' attendance and manage a class cohort

Ministry of Education, Gov. Grenada

Aug. 2010 - Jul. 2011

## COMP 420: Database Systems

### FACILITATOR

- Undergrad tutoring and small group facilitation

St. George's University

Aug. 2009 - May 2010

# Professional Experience

## Coalfire

### CYBERSECURITY CONSULTANT . INTERNSHIP

- Learn PCI SSC reporting essentials
- Participate in client-facing security assessments.
- Document PCI DSS compliance findings
- Collaborate on PCI process improvements.
- Project: Use Wireshark & DevTools for data encryption checks.

Greenwood, CO

May. 2023 - August. 2023

## St. George's University

### B-LINE ADMINISTRATOR . FACULTY

- Headed B-line division and managed teams across Clinical Skills
- Administered B-Line system and SimCapture platform
- Developed training material and trained users across clinical medicine education
- Mentored colleagues and interns

St. George's, GD

Dec. 2011 - July. 2021

## LIME (Cable & Wireless Communications)

### IT INTERN . INTERNSHIP

- Assist with troubleshooting and resolving IT issues
- Support software and hardware installations
- Document IT processes and incident reports
- Collaborate with the IT team on projects and tasks

Greenwood, CO

May. 2023 - August. 2023

# Service and Leadership

## Empirical Methods in Natural Language Processing

### EMNLP'23 CONFERENCE VOLUNTEER

- Provide technical support for the main conference
- Poster presentations support and coordination
- Participant registration and check-in

University Park, PA

Aug. 2023 - PRESENT

## Penn State Pan-African Professional Alliance

### IT OFFICER

- Set IT goals and lead initiatives
- Manage organization website
- Direct IT operations for organization's events and activities
- Support organization's president and executive members

University Park, PA

Aug. 2023 - PRESENT

## Graduate Student Association in Information Sciences & Technology

### PRESIDENT

- Led an executive team of 3 members and 170+ graduate students at Penn State
- Revised organization's mission and vision towards strategic change
- Conducted mass mixed-method student survey to assess needs, gaps, and college climate
- Analyze data using thematic analysis and descriptive statistics, and generate students' feedback report
- Advocated for students by presenting findings to the college deans, program directors, and administrative staff

University Park, PA

Nov. 2022 - Aug. 2023

## NSF LINDIV Graduate Research Training Program

### OUTREACH COORDINATOR

- Coordinated outreach for the NSF LINDIV Graduate research training program 2022
- Led a team of 7 to execute a STEM career day workshop, ENVISION, supporting young women

University Park, PA

Aug. 2022 - Jan. 2023

## Fit For Life: Youth Development Program

### DIRECTOR AND CO-FOUNDER

- Partnered with Fit For Life to develop a free youth development program for marginalized youths
- Mentored youths ages 7-27 to develop leadership, social and professional skills
- Trained next-generation dancers and youth leaders

St. George's, GD

Jun. 2010 - Jun. 2017

## Skills

### Programming Languages

Python, JAVA, SQL, LaTeX, HTML5, CSS, PHP, R, C++

### Machine Learning Tools

PyTorch, Tensorflow, Transformers, Pandas, Numpy, Scikit-learn, LLM, NLG, NLU

### Data Scrapping

Twitter API, Selenium, Tesseract

### Platforms

VS Codes, Epi Info, GeoDa, PyCharm IDE, IntelliJ IDE, Google Colab, Google Cloud

### Professional

Health Informatics, Epidemiology, Database, Presentation, Critical Thinking, Artificial Intelligence, Data Science

## Information System Projects

### St. George's University

St. George's, GD

#### TELEMEDICINE & VIRTUAL HOSPITAL TEACHING PROJECT

Sept. 2020

- Led team to gather functional requirements, and make strategic recommendations
- Execute the appropriation, piloting, testing, and implementation telemedicine technology
- Provided comprehensive training to clinical educators and skillfully administered the go-live, resulting in a successful outcomes.

### St. George's University

St. George's, GD

#### ONLINE CLINICAL EVALUATION EXERCISE PROJECT

Mar. 2019

- Spearheaded the creating, testing, piloting, training, and executing the online objective structured clinical examination
- Led team to re-engineer OSCE exam-flow and integrated with in-house platforms, done nowhere else in the world
- Prevented organization disruptions, aided smooth online transition that saved St. George's University an estimated 2M+ dollars

### St. George's University

St. George's, GD

#### OSCE MANAGEMENT IMPROVEMENT PROJECT

Aug. 2017

- Led OMI requirements gathering for students, faculty, and standardized patients
- Oversaw testing and implementation of curated technologies for 32 additional clinical simulation rooms
- Supported medical education delivery for 4000+ students
- Delivered successful project within a tight timeframe while ensuring optimal outcome

### St. George's University

St. George's, GD

#### B-LINE EXPANSION PHASE I PROJEC

Aug. 2014

- Led the outfitting 8 additional Clinical Examination rooms with clinical equipment, B-Line Medical equipment, and other educational supporting technologies

## References

**Ph.D Advisor** - Dongwon Lee, Ph.D., The Pennsylvania State University

Phone: +1(814) 865-0687

Email: dongwon@psu.edu  
Profile: <https://pike.psu.edu/projects.html>

**Undergrad Dean** - Theodore M. Hollis, Ph.D., Professor Emeritus, St. George's University  
Phone: 1(954) 661-1773  
Email: [theodoremhollis@gmail.com](mailto:theodoremhollis@gmail.com), [thollis@sgu.edu](mailto:thollis@sgu.edu)  
Profile: <https://www.linkedin.com/in/theodoremhollisphd/>

**M.Sc. Graduate Advisor.** - Vladimir Brusic, Ph.D. , BEng(Mech), MEng(Biomed), GDip(CompSci), MApp-Sci(InfoTech), MBA, Boston University  
Phone: +86 574 8818 0000 Ext 8809  
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Profile: <https://www.nottingham.edu.cn/en/science-engineering/people/inspiring-people/vladimir-brusic.aspx>

**Supervisor, (Ass. Dean)** - Dolland Noel, M.D., FACP, St. George's University  
Work: 444-4175 Ext: 3407/3172  
Email: [dnoel@sgu.edu](mailto:dnoel@sgu.edu)  
Profile: <https://www.linkedin.com/in/dolland-noel-19077864/?originalSubdomain=gd>

**MPH Graduate Advisor** - Emanuel Keku, M.A, MSPH, M.D., FACP, St. George's University  
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Email: [ekeku@sgu.edu](mailto:ekeku@sgu.edu)  
Profile: <https://www.sgu.edu/research/sgu-research/emmanuel-o-keku-ma-msph-md-faha/>