Luke Liang

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PUBLICATIONS

Experimental evaluation of a machine learning approach to improve the reproducibility of network simulations
L. Liang, H. Phan, P. J. Giabbanelli
Simulation, 2024

Simulation models for suicide prevention: a survey of the state-of-the-art
R. Schuerkamp, **L. Liang**, K.L. Rice, P. J. Giabbanelli
Computer 12.7, 2023

Preserving simulation insight while removing data: verification of compressed simulation traces via machine learning
M. Nguyen, D. Vu, A. Vo, **L. Liang**, P. J. Giabbanelli
Annual Modeling and Simulation Conference (ANNSIM), 2023

A new application of machine learning: detecting errors in network simulations
M. K. Wozniak, **L. Liang**, H. Phan, P. J. Giabbanelli
Winter Simulation Conference (WSC), 2022

A cellular automata approach to evaluating drug effectiveness for HIV
L. Liang, Z. Sun, P. J. Giabbanelli
In preparation

An artificial intelligence approach to support youth suicide prevention initiatives in the U.S.A
L. Liang, R. Schuerkamp, K. L. Rice, M. M. Brown, N. Nataraj, J. Mendoza-Alonzo, C. R. Harper, C. Florence, B. D. Maldonado, B. Moran, P. J. Giabbanelli
In preparation

Impact of policies, practices, and programs on preventing adolescent suicide: an agent-based modeling approach
K. L. Rice, P. J. Giabbanelli, M. M. Brown, N. Nataraj, C. R. Harper, **L. Liang**, R. Schuerkamp, C. Florence
In preparation

PRESENTATIONS

Presenting author listed first

Presentation. **L. Liang**, M. Nguyen, D. Vu, A. Vo, P. J. Giabbanelli, *Preserving simulation insight while removing data: verification of compressed simulation traces via machine learning*, ANNSIM conference. May 2023

Presentation. **L. Liang**, M. K. Wozniak, H. Phan, P. J. Giabbanelli, *A new application of machine learning: detecting errors in network simulations*, WSC online. Dec 2022.

Poster. **L. Liang**, M. K. Wozniak, H. Phan, P. J. Giabbanelli, *A new application of machine learning: detecting errors in network simulations*, COF Scholar showcase online. Feb 2022.

PROJECT EXPERIENCE

Undergraduate Researcher **Aug 2021 - Aug 2024**
Miami University *Oxford, OH*

- Published 4 papers focused on ML and network science (1 first author, 3 co-author) (Google Scholar). Two first author manuscripts involving web applications and simulation are under preparation.
- Created a self-contained web-based project via Docker that houses a simulation platform for researchers at the CDC to evaluate policy effectiveness on youth suicide prevention **(Python, Laravel, Docker, HPC)**.
- Applied machine learning models and several methods to augment input data to accurately (up to 90% in certain cases) differentiate between erroneous and correct simulation models **(Python, ML)**.
- Developed a simulation of HIV drug resistances and mutations to evaluate treatment efficiency **(Python)**.

EDUCATION

BS in Computer Science, BS in Data Science, Math Minor (GPA: 3.86) **Aug 2021 - May 2024**
Miami University *Oxford, OH*

- Astronaut Scholarship (national), Choose Ohio First Machine Learning Scholarship, Summa Cum Laude, Honors College
- Received training at University of Tennessee (National Science Foundation sponsored) for machine learning and data science through the HPC at Oak Ridge national laboratory (only student selected).

WORK EXPERIENCE

Teaching Assistant (Machine Learning & Algorithms) **Aug 2022 - Dec 2023**
Miami University *Oxford, OH*

- Led and published a final research project that evaluated the performance of several ML models and data compression techniques **(Python, ML)**.
- Tutored students in Python, data structures, algorithms, and ML.
- Provided feedback and graded exams, homeworks, quizzes, and projects for students.

Software Engineering Intern **Jun 2022 - Aug 2022**
JPMorgan Chase & Co *Chicago, IL*

- Converted existing AngularJS internal software to ReactJS with a full-time team. Deployed the updated framework that is used throughout the entire bank **(ReactJS, Jenkins)**.
- Won the Code for Good Hackathon 2022 with a web-based project to revamp a non-profit organization's website with a group of other interns **(Javascript, MySQL)**.
- Integrated legacy pages with new internally developed APIs and updated corresponding technical documents.