Sean Lane

Provo, Utah • hi@sean.lane.sh • sean.lane.sh • seanlane

Education

Doctor of Philosophy in Computer Science
April 2021

Brigham Young University — *Provo, Utah*

- Research interests include control systems, cyber security, data analysis, machine learning, and system modeling
- Master's thesis: Vulnerability Analysis of Infrastructure Systems — Anticipated Completion in April 2019
- Teaching Assistant for CS 611: Advanced Computer Theory

Bachelor of Science in Computer Science
April 2016

Brigham Young University — *Provo, Utah*

- Minor in Mathematics — Cumulative GPA: 3.4/4.0
- Member of the Association for Computing Machinery, BYU Chapter and the BYU Developers Club
- Teaching Assistant for CS 312: Algorithm Design & Analysis

Tools Used: C/C++ • C# • Java • JavaScript • Python • Apache Spark • Docker • Git • Linux/Bash

Experience

Director of Engineering
Jan. 2018 – Present

Achilles Heel Technologies — *Provo, Utah*

- Lead technical development and implementation of prototype application to predict cyber-physical system attacks
- Represented capabilities of cyber-physical vulnerability analysis to potential clients, investors, and stake holders
- Developed academic and industrial partnerships among university and private research organizations

Tools Used: Python • JavaScript • PostgreSQL • AngularJS • Docker • Git

Ph.D. Intern
Jun. 2017 – Present

Pacific Northwest National Laboratory — *Richland, Washington*

- Selected for the National Security Internship Program in the Computing and Analytics Division of PNNL
- Researching methods of conducting contingency analysis of power and water infrastructure models
- Developed component models to capture integrated power and water dynamics

Tools Used: Python • Java • MATLAB • Jupyter/IPython Notebooks • Git

Research Assistant
Sep. 2015 – Jun. 2017

BYU IDeA Labs — *Provo, Utah*

- Leading development of a web application using vulnerability research of cyber-physical systems
- Developed and presented project architecture to staff of sponsoring agency, the Dept. of Homeland Security
- Conducted analysis on financial market and client data to produce predictive models

Tools Used: Python • JavaScript • PostgreSQL • MATLAB • AngularJS • Docker • Flask • Git

Software Engineer in Test Intern
Apr. 2016 – Jul. 2016

Instructure — *Salt Lake City, Utah*

- Worked with the Data Analytics team to improve test coverage and deployment efficiency
- Created a framework used to test production SQL that is used in the Instructure ETL process
- Refactored existing codebase to facilitate project needs, like strict typing within Apache Spark SQL

Tools Used: Scala • JavaScript • Apache Spark • NodeJS • SQL • Docker • Git • Jira • SBT

Software Development Engineer Intern
May 2015 – Jul. 2015

Microsoft — *Redmond, Washington*

- Implemented Microsoft Office administrative feature to mitigate a social engineering attack vector
- Utilized an existing framework to add telemetry tracking of related features to assist business decisions
- Created a development plan in coordination with the Project Manager based on given specifications
- Coordinated with other organizations within Microsoft to integrate the project with the existing codebase
- Authored scenario tests to verify the integrity of the project as development continues

Tools Used: C++ • C# • Source Depot • Visual Studio