Sean Lane

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Education

Doctor of Philosophy, Computer Science - Brigham Young University – Provo, Utah April 2020

- Research interests include Control Systems, Cyber Security, Data Analysis, Machine Learning
- Current projects include Cyber-Physical System Robustness & Contingency Analysis of Power & Water Systems
- Advised by Dr. Sean Warnick of the BYU Information and Decision Algorithms Laboratories
- Teaching Assistant for CS 611: Advanced Computer Theory

Bachelor of Science, Computer Science - Brigham Young University – Provo, Utah April 2016

- 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 • MPI & CUDA

Experience

Director of Engineering – Achilles Heel Technologies – Provo, Utah Jan. 2018 – *Present*

- Responsible for product technical development, implementation, and maintenance
- Representing capabilities of cyber-physical vulnerability to potential clients, investors, and stake holders
- Fostering academic and industrial partnerships among university and private research laboratories

Tools used: Python • JavaScript • PostgreSQL • Docker • Git

PhD Intern – Pacific Northwest National Laboratory – Richland, Washington Jun. 2017 – *Present*

- 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 Notebooks • Git

Research Assistant – Brigham Young University, IDeA Labs – Provo, Utah Sep. 2015 – *Present*

- 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 • GitLab

Software Engineer in Test Intern – Instructure – Salt Lake City, Utah Apr. 2016 – Jul. 2016

- 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 • Node.js • SQL • Docker • Git • IntelliJ • Jira • SBT

Software Development Engineer Intern – Microsoft – Redmond, Washington May 2015 – Jul. 2015

- 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