CHRISTOPHER PITTS

Computer Scientist

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EDUCATION

DOCTOR OF PHILOSOPHY, Computer Science

The University of New Mexico, Albuquerque, New Mexico, 2024

MASTER OF SCIENCE, Computer Science - Machine Learning The Georgia Institute of Technology, Atlanta, Georgia, 2020

BACHELOR OF SCIENCE, Computer Science Brigham Young University, Provo, Utah, 2017

Professional Experience

R&D COMPUTER SCIENTIST | Sandia National Laboratories

DECEMBER 2018 - PRESENT

Albuquerque, New Mexico

- ATR assurance lead, developing assessments for algorithms and researching algorithm performance benchmarking
- Researched, designed, and implemented feature extraction and machine learning algorithms for processing overhead satellite imagery
- Developed new file formats and software libraries to process synthetic aperture radar imagery for automated target recognition research
- Directed work of year-round and summer interns to support mission objectives
- · Served as expert resource on testing methodology and continuous integration and continuous development processes

SOFTWARE SYSTEM ENGINEER | Sandia National Laboratories

Albuquerque, New Mexico

MAY 2017 - DECEMBER 2018

- Led transition to integrated development environment using Docker and GitLab CI improving development time and customer facing reporting
- Developed signal processing and analysis software for seismic sensor networks
- · Directed technical work of summer intern including tasking, review of completed work, and integration into final product

SYSTEMS ADMINISTRATOR | Brigham Young University

Provo, Utah

JANUARY 2016 - APRIL 2017

- Designed, implemented, and deployed software across more than 500 machines used by students and faculty on a daily basis
- Designed web-based user interface and backend for managing teaching assistant group membership

LAB SUPERVISOR | Brigham Young University

Provo, Utah

JANUARY 2015 - JANUARY 2016

- Audited student C++ for quality and performance, including offering feedback to students on performance and security flaws
- Taught program methodology and best practices

Publications

Pitts, Christopher, Danford, Forest, Moore, Emily, Marchetto, William, Qiu, Henry, Ross, Leon, and Pitts, Todd. 2022a. "Seascape: A Due-Diligence Framework for Algorithm Acquisition". In: SPIE Artificial Intelligence and Machine Learning in Defense Applications IV.
Pitts, Christopher, Danford, Forest, Moore, Emily, Marchetto, William, Qiu, Henry, Ross, Leon, and Pitts, Todd. 2022b. "Seascape: An

Algorithm Benchmarking Framework". In: Sixth Annual Workshop on Naval Applications of Machine Learning.

Presentations and Lectures

GUEST LECTURE | UNIVERSITY OF UTAH, COLLEGE OF COMPUTER SCIENCE, SALT LAKE CITY, UTAH APRIL 2019

• "Your Missing Semester"

CHRISTOPHER PITTS

Computer Scientist

• Spoke to computer science students regarding important areas for early career entry, and ways to bridge the gap between traditional computer science education and what is expected of a modern computer scientist or software engineer

PRESENTER | BRIGHAM YOUNG UNIVERSITY, COMPUTER SCIENCE DEPARTMENT, PROVO, UTAH APRIL 2019

- Computer Science: An R&D Computer Scientist's Prospective
- Presented information related to the life of an R&D scientist at a federally funded research and development center, and the differences between private and defense autonomous sectors

PRESENTER | OPENWEST CONFERENCE, SALT LAKE CITY, UTAH JUNE 2018

- "Supercharge Your Bash Prompt"
- Presented on techniques for more efficient uses of command line interfaces

PRESENTER | OPENWEST CONFERENCE, SALT LAKE CITY, UTAH

- JULY 2017
 - "Programming in Bash for Fun and Profit"
 - Presented on introductory techniques and best-practices for writing and deploying shell scripts

PRESENTER | OPENWEST CONFERENCE, SALT LAKE CITY, UTAH

JULY 2017

- "Build Awesome Websites with Flask Python"
- · Presented and discussed explanatory techniques and methods to utilize Flask Python to develop web service backends

TEACHING EXPERIENCE AND UNIVERSITY INVOLVEMENT

REMOTE ADJUNCT FACULTY | Brigham Young University

Rexburg, Idaho

DECEMBER 2020 - PRESENT

- CSE 210 Programming with Classes
- Taught material related to fundamental object-oriented programming concepts
- Assistant Course Lead, contributed to course design and material
- Piloted online teaching of course

INDUSTRY ADVISORY BOARD MEMBER | University of Utah, College of Computer Science

Salt Lake City, Utah

- FEBRUARY 2019 PRESENT
 - Represented Sandia National Laboratories in discussions on curriculum, program development, research development and opportunities, and hiring needs
 - Invited to speak with computer science students about starting and continuing careers in computer science

RELATED SKILLS, LANGUAGES, AND PROFICIENCIES

- C++ and C
- Python
- Rust
- Scientific Python, NumPy, Scipy, Jupyter, Pandas, Scikit-learn and Scikit-image
- · Linux proficiency
- Git, GitLab, GitHub
- Automated testing and deployment
- Virtualization and containerization (Docker, Vagrant, Podman)
- Java

SPECIAL PROJECTS

- Family Facial Recognition | Python ML program to extract and classify faces of family members in images
- Roku Station | C++ library and desktop application for discovery and control of Roku devices
- Helder | Command-line tool for control of Phillips Hue smart bulbs
- News Feed Aggregator | Web app to aggregate topic-based newsfeeds