CHASE P. ZIMMERMAN

March 2021

Sandia National Laboratories
Graduate Research Intern
Quantitative Modeling and Analysis

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RESEARCH INTERESTS

Quantum Computing, Quantum Information, Machine Learning, Computational Physics, Hardware Acceleration

EDUCATION

Doctor of Philosophy Engineering - Quantum Information Science, University of New Mexico

Center for Quantum Information and Control

Bachelor of Science Computer Engineering and Computer Science, University of Southern California, 2021

GPA 3.80/4.00 (Cumulative)

GPA 3.95/4.00 (Upper Division)

PEER-REVIEWED PUBLICATIONS

1. Natacha Peter-Stein, David Farley, Constantin Brif, Nicholas Pattengale, Chase Zimmerman, Meghan Galiardi, Yifeng Gao, Jessica Lin, Mitchell Negus, Rachel Slaybaugh. **Development of Novel Approaches to Anomaly Detection and Surety for Safeguards Data.** *Preceedings, 61st Annual Meeting of the Institute of Nuclear Materials Management*.
2. Bradley Jared, David Saiz, Matthew Roach, Scott Jensen, Maher Salloum, Constantin Brif, Chase Zimmerman, Elaine Rhoades. **Acoustic Signatures in Metal Laser-Powder Bed Fusion.** *Accepted for 2021 Annual International Solid Freeform Fabrication Symposium.*
3. Eric L. Goodman, Chase Zimmerman, Corey Hudson. **Packet2Vec: Utilizing Word2Vec for Feature Extraction in Packet Data.** *Proceedings, 2019 Machine Learning and Data Mining in Pattern Recognition* Vol. I, 161–175. **Presented by Chase Zimmerman at MLDM 2019**, New York, NY, USA, July 20–25, 2019.

Research Software

Packet2Vec, Deep-learning based automatic generation of network packet features for intrusion detection, with Eric Goodman and Corey Hudson (2018–2019).

POSITIONS

Sandia National Laboratories

Machine Learning Research Intern, May 2018–Present.

Novel approaches to anomaly detection in time series data.

New deep-learning approach to automatic feature extraction in network packet data.

Year-round position: 15-20 hours per week continuously since 2018, 40 hours per week (summer).

Web Development Intern, Jan 2018–May 2018.

Sole developer tasked with updating interactive Geographical Information System (GIS)-based web applications.

TEACHING

University of Southern California

Discrete Methods in Computer Science (CSCI 170): Spring 2021, undergraduate teaching assistant for Professor Sandra Batista.

Data Structures and Object Oriented Design (CSCI 104): Spring 2019, Spring 2020, Fall 2020, undergraduate teaching assistant for Professors Sandra Batista, Mark Redekopp, and Aaron Coté.

HONORS & AWARDS

Dean's List, University of Southern California, 2018–2020.

SKILLS

Programming Languages: Python, C/C++, Verilog, Matlab, JavaScript, Java, Rust, SQL, Assembly, LaTeX.

Software: Tensorflow, PyTorch, Mathematica, various web frameworks, various linux distributions.

Scientific Computing: Message Passing Interface (MPI), OpenMP, CUDA, development and deployment of software on large-scale HPC clusters.

AVIATION

Ground Instructor Advanced; Instrument, FAA, Issued March, 2021.

Remote Pilot Small Unmanned Aircraft System, FAA, Issued March, 2021.

Instrument Rating Airplane, FAA, Issued February, 2021.

Private Pilot Airplane Single Engine Land, FAA, Issued May, 2015.