Chase Zimmerman

925-719-4094
czimmer@sandia.gov
chase@splaytree.capital
https://www.thechase.io
Machine Learning Research Intern
Quantitative Modeling and Analysis

My current research applies deep learning and high-performance computing to network intrusion detection.

Research Interests

Artificial Intelligence • Machine Learning • Hardware Acceleration • High-performance Computing • Quantum Computing • Quantum Information • Quantitative Trading • Algorithm Design and Development

Education

May 2021 — **University of Southern California**, *B.Sc.*, Computer Engineering and Computer Science, Minor in Physics.
GPA 3.67/4.0
Dean's List 2018-2019
Emphasis on scientific computing and numerical analysis

Research Experience

May 2018 – current — **Machine Learning Research Intern**, *Sandia National Laboratories*, Livermore, CA.
- Developed a deep learning approach to automatic feature extraction in raw network packet data.
- Designed low-level C++ applications to process and vectorize large amounts of data.
- Applied anomaly detection algorithms to engineering systems.
- Year-round position.

Industry Experience

November 2018 – current — **Partner and Quantitative Developer**, *Splay Tree Capital*, Palo Alto, CA.
- Splay Tree Capital is a quantitative trading firm focused on crafting algorithmic strategies and engineering investment portfolios that consistently outperform the market index.
- Developed a custom backtesting platform for quantitative trading algorithms.
- Implemented and designed trading algorithms

January – May 2018 — **Web Development Intern**, *Sandia National Laboratories*, Livermore, CA.
- Developed interactive web applications designed to display and manage geospatial data served from GIS software.
- Detecting web application vulnerabilities using static and dynamic application security testing methods.

Journal Publications

1. EL Goodman, C Zimmerman, and C Hudson, Packet2Vec: Utilizing Word2Vec for Feature Extraction in Packet Data. (2019).

Workshops and Conferences

July 2019 — **MLDM 2019**, *International Conference on Machine Learning and Data Mining*, New York, NY.

Awards & Honors

Fall 2018 –
Spring 2019
Dean's List, USC Viterbi School of Engineering.

Teaching

Spring 2019 –
current
Teaching Assistant, *Data Structures and Object Oriented Design (CSCI 104)*, University of Southern California, Prof. Sandra Batista, Prof. Aaron Coté.

Skills

- **Data and Computer Science:** Machine Learning, Data Mining, Optimization, Artificial Intelligence, Linear Algebra, Parallel Programming, Distributed Systems, Data Structures

- **Computer and Electrical Engineering:** FPGA Programming, IoT, Networking

- **Development:** Python (preferred), C/C++, JavaScript, Java, SQL, Assembly, Verilog, LaTeX

- **Technology:** ML Frameworks (Tensorflow, PyTorch, etc.), web frameworks, databases, linux, git, vim, tmux

References

Edward Walsh, *Mentor*, Sandia National Laboratories, ejwalsh@sandia.gov.