

# Chase Zimmerman

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<https://www.thechase.io>  
Computer Science R&D 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 – **Computer Science Research Intern, Sandia National Laboratories, Livermore, CA.**  
*current*

- 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 – **Partner and Quantitative Developer, Splay Tree Capital, Palo Alto, CA.**  
*current*

- 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 – **Web Development Intern, Sandia National Laboratories, Livermore, CA.**  
May 2018

- 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.**

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## Awards & Honors

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

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## Teaching

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

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## 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,  $\text{\LaTeX}$
- **Technology:** ML Frameworks (Tensorflow, PyTorch, etc.), web frameworks, databases, linux, git, vim, tmux

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## References

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