

Zac Freeman  
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## Education

**B.S. in Physics | Florida State University**

**August 2014 - December 2017**

- GPA: 3.889
- Minor: Mathematics
- Additional Coursework: Data Structures and Algorithms, Partial Differential Equations, Communication in Physics

## Experience

**Systems Engineer | AutoZone**

**January 2020 - Present**

- Trained a cohort of incoming systems engineers to traverse and troubleshoot a network of systems running a custom Linux distribution
- Increased visibility into store systems by configuring rsyslog and Filebeat to upload events from the registers to a central server
- Hardened C++ payment processing software handling \$5B a year across 20,000 devices
- Served as the final reviewer for several large changes ( $\sim 10,000$  lines) to the C++ software ecosystem in the stores
- Collected, analyzed, and presented the performance impact of introducing Docker to the store environment using Bash, Perl, and  $\text{\LaTeX}$ , respectively
- Updated a custom C++ time clocking software to prompt employees with surveys to meet California payroll compliance, recovering \$2,000,000 a year in penalties

**Software Developer II | Frontdoor**

**October 2018 - December 2019**

- Led the software development for a security initiative, implementing reCAPTCHA for login and registration, session token handling, email verification, and ADFS SSO into a legacy ATG B2B site
- Integrated a 3rd party payment processor to meet new PCI standards for a legacy ATG B2B site
- Designed and built a microservice with Go and Docker to enable B2B clients to place orders in database without interacting with legacy ATG B2B site

**Research Assistant | UAH Heliophysics**

**May 2017 - August 2017**

- Created a model of gamma rays in a magnetic trap with the goal of reproducing real world data
- Used C++, CUDA, and the Runge-Kutta method to simulate many parallel gamma ray systems on various NVIDIA GPUs
- Analyzed data produced to discover novel behavior of cosmic rays inside expanding magnetic traps

**Research Assistant | FSU Math Department**

**June 2016 - August 2016**

- Created simulation of the flow of two liquids in a closed system with the goal of confirming the accuracy of results published in *Physica*
- Used MATLAB and numerical methods for partial differential equations to generate 1D and 2D simulations and analyzed the physical accuracy of the data using energy conservation and the maximality principle
- Results from simulations contributed to the paper *Maximally Preserving Finite Difference Schemes for the Allen-Cahn Equation using Operator Splitting*, presented at SIAM-SEAS 2017

## Skills

<b>Languages</b>	C++, $\text{\LaTeX}$ , CUDA, MATLAB, Python, Javascript
<b>Software</b>	Linux, Docker, Qt