Kevin Cawley

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Education

Michigan State University, East Lansing, Mi
May 2024

Bachelors of Science majoring in Computer Engineering, Honors College
Minor in Chinese Language

- Overall GPA 4.0/4.0

Experience

Software Intern Technical, Northrop Grumman, Rolling Meadows, Illinois *May 2022- July 2022*

- Collaborated with Datalink's software team to resolve issues and implement new features in an actively used codebase written in C within a Linux operating system
- Facilitated tests to confirm the functionality of code changes by configuring field-supported hardware to simulate operating conditions that the customer contractually specified
- Programmed and tested software conducted with a LITENING Pod (AN/AAQ-28) in a lab setting
- Communicated daily with an interdisciplinary team in an Agile setting to collaborate on problems, share updates, and meet customer specified deliverables
- Spread headed the development of additional unit tests using Google's GTESTs in C++ for the Datalink product line to ensure Continuous Integration/Development Operations
- Worked with design authority to review and update code coverage for the Datalink product line

Professorial Assistant, Michigan State University, East Lansing, Michigan *August 2020- May 2022*

- Worked jointly with Dr. Kerzendorf and his team to assist documentation of mathematical code modelling
- Wrote Python scripts to interact with and improve TARDIS, Temperature and Radiative Diffusion in Supernova, which is an open-source scientific Linux program used to create fast and accurate one-dimensional approximations of supernova spectra composition based on user inputs
- Created the TARDIS website in HTML and CSS with guidance from a senior research assistant using a platform for creating static websites in order to create an official presence for TARDIS
- Implemented Numba's CUDA to create GPU versions of multiple complex montecarlo functions, as well as a custom test suite, which sped up computation by almost 20 times

Apprentice, XSEDE-EMPOWER, Flossmoor, Illinois *May 2021- July 2021*

- Developed the first profile of TARDIS and of a Numba project using a custom implementation of a python timing module in order to track Numba code. This code compiled directly to machine language via LLVM and is not visible by the python interpreter, and analyzed the results to see where the majority of runtime and function calls occurred
- Analyzed different input parameters of TARDIS using compute nodes on a cloud-based supercomputer, looking for inputs that increased runtime exponentially when scaled linearly
- Refactored a section of code spotted by profiling to run on a GPU using Numba's CUDA in order vastly speed up communication by parallelization
- Contributed to Numba's open-source testing package used for nightly integration tests by creating a method for non-conda dependencies to be added to projects, enabling other projects to be added without the need for custom installation commands
- Developed changes for the GitHub texasbbq open-source module that drove the first release since its inception

Skills/Certifications

- Programming and Analysis: MATLAB, C, C++, Python, HTML, CSS, Numba CUDA, Linux, VS Code
- Productivity: Agile Processes, MS Office 365, Slack, GitHub, SharePoint, Jira
- Languages: Conversational in Chinese
- United States Government Secret Clearance
- United States Citizen
- National Gold Medal in Harp Level 4 | Royal Conservatory of Music
- First Class Honors with Distinction Level 8 | Royal Conservatory of Music