Robin Simpson

818-797-8710 rsimps03@calpoly.edu linkedin.com/in/rsimpsontw robinttw.com

Education

California Polytechnic State University **September 2023 – May 2025**
Bachelor of Science in Computer Engineering w/ Minor in Astrophysics *San Luis Obispo, CA*

Experience

California Polytechnic State University COSAM **September 2023 – Present**
Computational Data Researcher *San Luis Obispo, CA*

- Conducted comprehensive research on galaxies and cosmology using LSST datasets from the Rubin Observatory, advancing the field's understanding of celestial phenomena.
- Applied advanced data analytics using Python and implemented machine learning techniques to decipher intricate patterns in vast astronomic datasets, ensuring precise and impactful findings.
- Collaborated with a team of astronomers and scientists to analyze and interpret results, presenting findings on research papers and conferences.

Lawrence Livermore National Laboratory **June 2023 – August 2023**
Software Engineer Intern *Livermore, CA*

- Contributed to the development of Darc, a system powered by FastAPI, Angular, and Docker. This initiative manages petabytes of test data, streamlining data archiving and search functionalities to align with the U.S. Department of Energy's stockpile assurance standards.
- Focused on backend development, designing RESTful API endpoints and implementing unit/integration tests. The collective effort, marked by over 1000 code contributions, aided in refining Darc's architecture and enhancing stability.
- Supported the strategic shift from MarkLogic to MongoDB and Elasticsearch, advancing Darc's data management and retrieval capabilities.
- Engaged in Agile methodologies to drive streamlined development and deployment processes. Collaborated in weekly Scrum and Sprint meetings, ensuring efficient ticket assignments and fostering team synergy on a team of 7.

Lawrence Berkeley National Laboratory **June 2023 – August 2023**
Information Technology Intern *Berkeley, CA*

- Participated in file analysis, file carving, malware decomposition, network traffic analysis, and host forensics.
- Assisted the IT team via ServiceNow and Crowdstrike in updating 5000 outdated and out-of-compliance systems .
- Supported the HelpDesk and Endpoint Management Team with troubleshooting, on-boarding, and maintenance tickets throughout all 22 laboratory departments.
- Collaborated on a team of 3 fellow interns under the OMNI Program to research cybersecurity vulnerabilities presentable to the Department of Energy.

Argonne National Laboratory **June 2022 – August 2022**
Computing Intern *Lemont, IL*

- Developed a web application that geolocated and visualized 500 critical infrastructure sites in the SF Bay Area.
- Utilized Cytoscape.js, Deck.gl, Heroku, and Python to generate a graphical 3D arc and heat map rendition of datasets.
- Collaborated with an intern colleague to integrate a Unity 3D simulation demonstrating the cascading impacts of infrastructure failures.

Projects

SQL Remake | *C++, Google Test*

- Developed a C++ implementation of the SQL programming language from scratch, including the design and execution of its data structures and logic components.
- Integrated automatic batch line processor and user command line. Stores files locally in txt and binary format.

OnlyBikes | *Python, Tensorflow, Django*

- Designed and implemented a bike rental service, integrating automatic detection and tracking functionalities using TensorFlow for machine learning and MapQuest API for location services.
- Leveraged Django and PostgreSQL for the management and storage of bike objects and user data, implementing user authentication through the Auth0 API.

Technical Skills

Languages: Python, Java, C, C++, HTML, CSS, JavaScript, SQL
Developer Tools: VS Code, Git, MongoDB Compass, CI/CD, Powershell
Technologies/Frameworks: Linux, GitHub, Gitlab, FastAPI, Django, RESTful, UnitTest, TDD, ElasticSearch