

Grant Nations

Computer science and physics student.

EDUCATION

University of Utah — BCS Computer Science, BS Physics

FALL 2019 - SPRING 2024, SALT LAKE CITY, UT

- Computational physics emphasis
- 3.99 cumulative GPA
- Academic Excellence full tuition scholarship recipient
- National Merit Commended Scholar
- Student athlete on Varsity Swim and Dive, Fall 2019 - Spring 2021

WORK HISTORY

KBR — Operations Research Engineering Intern

AUGUST 2022 - PRESENT, SALT LAKE CITY, UT

- Research and develop a mixed-integer programming model and parallel machine scheduler for observations of satellites to produce high-density schedules.
- Research and develop algorithms utilizing logic-based benders decomposition to reduce the time needed to solve programming models.
- Implement MIP models and decomposition algorithms in Python using the GEKKO optimization library.
- Adapt the open-source Python package Astroplan to be usable within space domain awareness applications.

University of Utah College of Science — PANDA (Physics AND Astronomy) Network Mentor and Committee Member

AUGUST 2022 - PRESENT, SALT LAKE CITY, UT

- Lead group activities for freshman students to explore their opportunities within the Physics and Astronomy department and university.
- Discuss plans with Physics and Astronomy professors and mentors to achieve the best outcome for students in the freshman seminar.

University of Utah College of Engineering — Undergraduate Research Assistant

SEPTEMBER 2021 - APRIL 2022, SALT LAKE CITY, UT

- Assist in the research of high-temperature reference electrodes to improve the accuracy of molten salt nuclear reactor monitoring.
- Run short-term and long-term OCP, CV, and EIS analysis of three-electrode cell with high-temperature salt electrolyte to determine feasibility of reference electrodes.

PROJECTS

Kana Shuffle | React, Node, Express, Heroku

- Solve the problem of memorizing character order when practicing writing hiragana and katakana Japanese characters.
- Create randomly ordered hiragana and katakana for users to download.

Pupil | React, Redux, Django, Raspberry Pi, Celery, Amazon S3

- Lead a team of three students working on a hardware/software solution to streamline the use of hybrid classroom technology for professors and students on college campuses.
- Prototype automated recording system using a Raspberry Pi, Django, and Celery.

E-Commerce Application | React, Redux, Firebase

- Simulate an at-scale e-commerce application for a fake brand Crown Clothing using React, Redux, and Firebase.
- Maintain user sessions with Redux Persist.
- Handle application state with React Context, Redux Thunks, and Redux Sagas.

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TECHNICAL SKILLS

Languages

Java, Python, C, Javascript, Typescript, C++, HTML, CSS, MATLAB, C#, Solidity, SQL

Frameworks/RTEs/Libraries

React, Redux, Express, Node.js, GEKKO, NumPy, Astroplan, SciPy, Qt

Tools

SolidWorks, AWS, Git, Github, Docker, CodeCommit, Firebase, Stripe, Amplify, Netlify, Heroku

SOFT SKILLS

Creativity, communication, teamwork, problem-solving, leadership, adaptability, responsibility

COURSEWORK

- Interactive Computer Graphics
- Software Practice I
- Software Practice II
- Computer Security
- Algorithms
- Computer Systems

CERTIFICATIONS

- Complete Web Development Bootcamp, Udemy
- Mechanical Design Associate (SolidWorks), Dassault Systèmes
- Machine Learning, Data Science and Deep Learning with Python, Udemy
- Blockchain Basics, Coursera
- 2021 Complete Python Bootcamp from Zero to Hero in Python, Udemy