

# Cal Hargis

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## EDUCATION

### BS in Computer Science

Brigham Young University

Apr 2024

Provo, UT

- Relevant Coursework: Software Engineering, Android Development, UX Design, User Interface Software, Software Design & Testing, Algorithm Design & Analysis, Machine Learning.

## EXPERIENCE

### Software Engineer Intern

Family Search

May 2023-Dec 2023

Lehi, UT

- Constructed robust production code for FamilySearch, leveraging Java Apache Spark, to efficiently extract hint files from a large-scale AWS database, improving data extraction processes.
- Collaborated closely with cross-functional teams in an Agile workflow, facilitating the alignment of over 20 project requirements with business objectives, resulting in a 15% increase in development efficiency.
- Developed Java scripts to efficiently extract over 2,000,000 hint files from AWS servers utilizing AWS CloudFormation, substantially enhancing data retrieval processes.
- Utilized AWS monitoring and logging tools to track and optimize the performance of data extraction processes, ensuring reliable and consistent results.
- Created bash scripts that reduced AWS CloudFormation run times by 83%, decreasing execution time from 30 minutes to 5 minutes.

### Research Assistant

Brigham Young University

Apr 2020-Dec 2022

Provo, UT

- Engineered robust data pipelines leveraging NumPy, Pandas, and Scikit-learn; conducted statistical analyses and developed machine learning models, improving predictive accuracy by 25% and reducing data processing time by 40%.
- Performed preparation of 2 separate research papers and presentations by providing technical insights and visualizations generated from random forest model analyses.
- Collaborated in weekly team meetings to discuss progress, challenges, and potential enhancements to artificial intelligence models, fostering a productive research environment.

## PROJECTS/RESEARCH

### Machine Learning Analysis of Dynamic-Dependent Bond Formation in Trajectories with Consecutive Transition States

- Published in Wiley Online Library, a reputable scientific journal with over 8 million articles from 1,600 journals, demonstrating expertise in predictive modeling and data analysis.
- Performed all training, data collection, and created graphs for data visualization for one of two molecules studied in the aforementioned research article.

### Machine Learning Classification of Disrotatory IRC and Conrotatory Non-IRC Trajectory Motion for Cyclopropyl Radical Ring Opening

- Co-authored and published in Royal Society of Chemistry, the oldest and one of the most highly respected journals in Chemistry, demonstrating expertise in machine learning and data analysis.

## SKILLS

- Proficient in Java, C++, C, Git, AWS, Python, JavaScript, HTML, CSS.
- Experienced with iOS and Android Development along with various frameworks such as React Native and Vue.js