Cal Hargis

(928) 651-8129 · calhargis1@gmail.com · https://www.linkedin.com/in/calhargis
https://github.com/calhargis · http://calhargis.com

EDUCATION

BS in Computer Science Apr 2024
Brigham Young University 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 May 2023-Dec 2023
Family Search 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 Apr 2020-Dec 2022
Brigham Young University 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/PRESENTATION

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.
- Presented at the 2022 BYU Student Research Conference on using machine learning to uncover the origin of dynamic selectivity in sigmatropic rearrangement reactions through quasiclassical direct dynamics simulations.
- 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