

Josh Bedwell

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Education

University of California at Berkeley

M.S. in Molecular Science and Software Engineering | GPA: 4.0

Expected May 2025

Berkeley, CA

Brigham Young University

B.S. in Computer Science, emphasis in Software Engineering

Apr 2023

Provo, UT

Projects

Scenario & File-Based Unit Testing Python Package, PyPi: [unittest-scenarios](#), [GitHub](#)

2025

- A framework for platform agnostic state & file based unit testing, useful for data pipeline projects

Phylogenetic Trees & Primers, Transition Biomining & University of British Columbia, [GitHub](#)

2025

- Engineered robust data pipelines integrating bioinformatics tools including Alphafold, MMSeqs2
- Extended functionality of TreeSAPP package and improved accessibility for novices

Multimodal Brain Tumor Segmentation Challenge 3D CNN

2024

- Designed 3D convolutional neural networks to predict volumes of different tumor types in 3D MRI images
- Created dynamic analysis tools to reduce input size by over 70% while maintaining >95% input detail
- Designed, trained, and validated models with 7M - 117M params, achieved $r^2 = 0.53$ with exploratory model

Django Hierarchical Models Python Package, PyPi: [django-hierarchical-models](#), [GitHub](#)

2024

- A performance-aware Django extension for model schemas such as graph DBs, threads, organizations, etc.

Production ETL Web App, Partners Personnel

2022-2023

- Architected modern Django ETL application to replace local MS Access program
- Designed node-based pipeline architecture, enabling unit testing, serialization, and meeting per-client needs

Experience

Research Assistant, BYU STaPL & Chemical Engineering – Provo, UT

Jan 2021 – May 2023

- Performed data analysis, including natural language processing, for publications focused on cross cultural interactions and user privacy behavior
- Led prototyping and development of neurodiverse-friendly social platform features
- Designed and deployed a lab website, hosting dozens of team members and projects
- Refactored, modularized, and tested a new combustion simulation library, enabling publication

Academic Tutor, Utah Valley University – Orem, UT

Jan 2022 – May 2022

- Provided individual academic support for undergraduate computer science courses

Teaching Assistant, BYU Chemical Engineering & Computer Science – Provo, UT

Jan 2019 – Apr 2021

- Provided lab and tutorial sessions for chemical engineering scientific programming course
- Provided individual academic support in computer science courses including Intro to Programming, Algorithms and Data Structures, and Discrete Structures

Publications

CHI '24: Video Interventions to Educate Users about Targeted Advertising on Facebook

[doi.org](#)

CSCW '23: Comparing Interpersonal Information Disclosure Norms on Twitter

[doi.org](#)

SoftwareX '23: A Soot Model Library for Combustion Simulation

[doi.org](#)

Skills

Languages: Python, C, C++, Java, Swift, Rust, JavaScript

Machine Learning: TensorFlow, PyTorch, Sklearn

Services: AWS (DynamoDB, API Gateway, Lambda, S3), GitHub Actions CI/CD

Frameworks/Tools: Django, Flask, Numpy + Pandas, CMake, Docker, SwiftUI