Josh Bedwell

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Education

University of California at Berkeley — Expected May 2025
M.S. in Molecular Science and Software Engineering | GPA: 4.0 — Berkeley, CA

Brigham Young University — Apr 2023
B.S. in Computer Science, emphasis in Software Engineering — Provo, UT

Experience

Research Assistant, Social Technology and Privacy Lab – Provo, UT — May 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, displaying team members and projects for an extensive lab

Academic Tutor, Utah Valley University – Orem, UT — Jan 2022 – May 2022

- Provided individual academic support for undergraduate computer science courses

Research Assistant, BYU Chemical Engineering – Provo, UT — Jan 2021 – Aug 2021

- Refactored, modularized, and tested a new combustion simulation library, enabling publication

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

Projects

Transition Biomining & University of British Columbia – TreeSAP and qPCR primer selection (2025)

- Leveraging AI to find optimal qPCR primer sets for environmental bacteria related to mineral resources
- Developing improved tools for creating reference datasets in TreeSAP phylogenetic software

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

Partners Personnel – Django ETL App (2022-2023)

- Architected web-based ETL application to replace local MS Access program
- Designed node-based pipeline architecture, enabling unit testing, serialization, and meeting per-client needs
- Deployed with robust client front end and Azure AD integration

Skills

Languages: Python, C, C++, Java, Swift, Rust, JavaScript
Services: AWS (DynamoDB, API Gateway, Lambda, S3), GitHub Actions CI/CD
Technical Methodologies: Agile Development, Scientific Computing, Data Analysis, Test Driven Development
Frameworks/Tools: Django, Flask, TensorFlow, PyTorch, Numpy, Pandas, Scikit, Seaborn, CMake, Docker