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

Garret, Smith, **Bedwell, Joshua**, et al. 'I know I'm being Observed:" Video Interventions to Educate Users about Targeted Advertising on Facebook'. *Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems*, Association for Computing Machinery, 2024, https://doi.org/10.1145/3613904.3642885. CHI '24.

Mondal, Mainack, **Bedwell, Joshua**, et al. 'A Tale of Two Cultures: Comparing Interpersonal Information Disclosure Norms on Twitter'. *Proc. ACM Hum. -Comput. Interact.*, vol. 7, no. CSCW2, Association for Computing Machinery, Oct. 2023, https://doi.org/10.1145/3610045.

Stephens, Vibtoria B., **Bedwell, Joshua**, et al. 'SootLib: A Soot Model Library for Combustion Simulation'. *SoftwareX*, vol. 22, Elsevier, May 2023, https://doi.org/10.1016/j.softx.2023.101375.

Projects

Transition Biomining – Predictive generation of qPCR primers (2025)

- Developing AI model to find the best primer set for qPCR of environmental microbial community
- Leveraging model for successful critical mineral extraction

University of British Columbia – Fast phylogenetic mapping of functional anchor genes (2025)

- Extending TreeSAPP phylogenetic profiling library with reference packages for several biogeochemical processes
- Developing scripts to efficiently parse TreeSAPP outputs and link disparate feature information across databases

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 Deployment (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
- Implemented dynamic documentation generation and integration
- 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), GitHub Actions CI/CD
Technical Methodologies: Agile Development, Scientific Computing, Data Analysis
Frameworks: Django, Flask, TensorFlow, PyTorch, SwiftUI