HENRY BURGESS

Phone: +1 (314) 891-2285
Email: henryjburg@gmail.com
LinkedIn: @henryjburg
GitHub: @henryjburg

Results-oriented Software Engineer with a proven track record of delivering high-performance solutions across diverse projects. Possesses a versatile skillset and thrives in fast-paced environments, readily adapting to new technologies. Passionate problem-solver with a strong focus on innovation and ownership throughout the entire software development lifecycle.

EDUCATION

Bachelor of Engineering (Hons.) (Software)

The University of Queensland *Brisbane, Australia*

January 2017 - June 2021

GPA: 6.67 (equiv. 3.85), Honors Class I

Thesis: "Implementation of Online Neuropsychological Tasks using JavaScript"

Thesis Supervision: Linda Richards AO, FAA, FAHMS, PhD; Ryan Dean, PhD; Richard Thomas, MAppSc

Awards and Honors: UQ Future Leader (Class of 2021), Hawken Scholar (2020), Dean's commendation for academic excellence (2019, 2021)

Dalian Neusoft University of Information *Dalian, China*

June 2018 - July 2018

Awarded a travel grant to attend and participate in an innovation and entrepreneurship program facilitated by the Australian Government's New Columbo Plan.

PROFESSIONAL EXPERIENCE

Washington University School of Medicine in St. Louis — Software Engineer II

September 2021 - Present *St. Louis, United States*

Led the full software development lifecycle for various complex research projects, ensuring timely delivery of software solutions critical to neuroscientific advancements. Implemented multiple full-stack web applications to present complex 2D stimuli and collect behavioral data from 30 participants in-person and online across two continents. Pioneered the creation of three unique virtual reality paradigms using Unity and WebXR, successfully gathering behavioral data from 10 participants. Conceptualized and implemented a metadata management web application to store and index scientific metadata associated with animal research artefacts. Utilized MongoDB with TypeScript, React, and Chakra UI to present a responsive interface managing hundreds of metadata records and enabling multi-parameter query searches across all records within 200ms. Awarded a partnership with Georgia Institute of Technology to oversee development of additional features.

The University of Queensland — Teaching Assistant

January 2019 - June 2022 *Brisbane, Australia*

Guided student learning, marked student assessment, and collaborated on coursework development. Engaged for multiple semesters at the request of course coordinators.

CSSE1001 (Introduction to Software Engineering): Python; Object-Oriented Programming (OOP)

CSSE3012 (The Software Process): Software Development Life Cycle (SDLC); Agile

COMP4500 (Advanced Algorithms and Data Structures): Java; Computer Science; Data Structures

DECO2800 (Design Computing Studio 2): Java; Project Management; CI/CD

Queensland Brain Institute — Research Assistant

January 2021 - September 2021 *Brisbane, Australia*

Delivered multiple behavioral research tasks using JavaScript, resulting in continued research data collection and scholarly publications. Assisted with data collection and behavioral testing of research participants.

Deswik (Sandvik Group Member) Software Intern

January 2020 - February 2020 *Brisbane, Australia*

Delivered bug fixes, interface enhancements, and general maintenance in the *Deswik.Sched* product development team. Used Visual Studio 2019 and C# in an Agile environment, participated in daily stand-up meetings and sprint retrospectives. Used Atlassian's Confluence and Jira to manage workflow.

CSIRO Research Assistant

June 2019 - July 2019 *Brisbane, Australia*

Developed a geospatial web application prototype using Google satellite imagery and JavaScript. Required to understand an agricultural context and UX requirements of end-users from subject-matter experts.

PROJECTS

Metadata Aggregator for Reproducible Science (MARS)

Open-source metadata management web application used to manage hundreds of scientific metadata records. Allows data to be imported and exported for barcoding purposes. Supports third-party authentication and record ownership.

Tools: React, TypeScript, Webpack, Node.js, Express.js, MongoDB, Docker

Dynamic Cognitive Tasks

General paradigm enabling full-stack behavioral experiments, implemented using Python, MATLAB, or R. Allows advanced computations or modeling to inform dynamic experiment behavior and enable multiplayer experiences.

Tools: Docker, R, MATLAB, Python

jspsych-attention-check

jsPsych plugin using TypeScript to present multiple-choice questions to participants completing behavioral and cognitive research tasks online. Ensures participant attention is retained, improving the data quality and reproducibility of online research.

Tools: jsPsych, TypeScript, Webpack

Neurocog.js

JavaScript package augmenting the functionality of jsPsych-based behavioral and cognitive research tasks. Facilitates integration with online platforms and streamlines developer experience when deploying behavioral research tasks online.

Tools: jsPsych, TypeScript, Jest, Webpack

PUBLICATIONS

Peer-reviewed

Richards, L. J., Barnby, J., Dean, R., **Burgess, H.**, Kim, J., Teunisse, A., ... & Dayan, P. (2021). Increased persuadability and credulity in people with corpus callosum dysgenesis. *Cortex.* https://doi.org/10.1016/j.cortex.2022.07.009

Conference Presentations

Cognitive Neuroscience Society Meeting

"Realizing Dynamic Cognitive Tasks with Cloud-based Computation" *2023*

Society for Neuroscience

"Neurocog.js; A new tool for running cognitive experiments in both lab and online environments." *2022*

IRC[5] Meeting

"Enabling behavioural research with Computer Science" *2022*

MEMBERSHIPS

Society for Neuroscience

Regular Member *2022 - Present*

Cognitive Neuroscience Society

Graduate Member *2022 - Present*

The United States Research Software Engineer Association (US-RSE)

Member *2022 - Present*

International Research Consortium for the Corpus Callosum and Cerebral Connectivity (IRC⁵)

Associate member, Neuropsychology *2021 - Present*

Engineers Australia

Graduate Member *2021 - Present*

PERSONAL LIFE

Outside of work, I appreciate a variety of outdoor hobbies including backpacking and running. While in the USA, I have taken the opportunity to explore many National Parks and have hiked to the highest point in the contiguous United States, Mt. Whitney (14,505ft). Completing my first half-marathon in 2022, I enjoy running both as a hobby and stress-reliever around the expansive Forest Park in my current home of St. Louis. Cooking is an everyday hobby that I enjoy after returning home from work, and I often enjoy the opportunity to cook and host for others.