

Matthew Russell

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WORK EXPERIENCE

HCI Researcher - *Tufts University HCI Lab* 2017 - Present

Designed, implemented, ran, and analyzed human subject studies leveraging fNIRS and EEG devices intended to enhance user experience.

Lecturer - *Tufts University* Summer 2020

Taught Data Structures in C++.

Teaching Assistant - *Tufts University* 2017 - Present

Teaching Assistant for a variety of courses: Data Structures (C++), Computer Graphics (C++), Intro CS (Python), Cybersecurity, and Concurrency (Erlang).

Research and Teaching Assistant - *Syracuse University* 2015 - 2017

Developed research code in Matlab for the CARE lab at Syracuse University, and taught Dr. Natalie Russo's PhD candidates programming fundamentals.

Research Assistant - *Hamilton College* Summer 2010

Assisted Professor Leanne Hirshfield with human-subject fNIRS research.

Research Assistant - *Hamilton College* Summer 2009

Assisted Mark Bailey working in Emacs Lisp on a project to analyze the time-efficiency of programming sessions.

Teaching Assistant - *Hamilton College* 2008 - 2010

Aided CS students working on programming assignments in Python and C++.

PROJECTS

Gradescope Autograder — *Autograding infrastructure*

C/C++ autograding framework that integrates with Gradescope. Currently in use by TAs and Professors at Tufts. Written in Python. <https://rb.gy/t9r14h>

unit_test — *A C++ unit testing framework*

A C++ unit testing framework currently in use by Tufts' Data Structures students

Python Script: <https://rb.gy/8bjfui> | VSCode Extension (TypeScript): <https://rb.gy/tex0so>

EDUCATION

MS Computer Science 2017 - 2020

Tufts University

BA Computer Science & English Literature 2007 - 2011

Hamilton College

PROGRAMMING LANGUAGES

Python

C++

Javascript

Typescript

Bash

Html

Matlab

Java

C

Erlang

PostgreSQL

RELATED SKILLS

UNIX

Git

Docker

Node/Express

Flask

Heroku, GCP, AWS, ngrok

DigitalOcean

CI/CD (Gitlab, Heroku)

Pandas, Numpy, Sklearn

RESEARCH SKILLS

Can design, implement, run, and analyze human subject studies. Comfortable with IRB protocols. Can perform studies leveraging brain-sensing (EEG/fNIRS) systems.

OTHER

From fall 2011 - winter 2014, I lived at a Rinzaï Zen Buddhist monastery - Dai Bosatsu Zendo. Work responsibilities were varied, ranging from teaching yoga and meditation, to being personal assistant to the Abbot, to helping coordinate and run 7 day retreats.

PUBLICATIONS

M. Russell, A. Shah, G. Blaney, J. Amores, A. Cambon, M. Czerwinski, R.J.K. Jacob, "Your Brain on an Interactive LLM" *[in review]* (2024).

M. Russell, S. Youkeles, A. Shah, E. Lai, R.J.K. Jacob, "Chess, Cognitive Neuroscience, and their Interaction with the MUSE 2 device for BCI" *[in review]* (2024).

M. Russell, S. Hincks, L. Wang, A. Babar, Z. Chen, Z. White, R.J.K. Jacob, "Visualization and Workload with Implicit fNIRS-based BCI" *[in review]* (2024).

A. Bosworth, M. Russell, and R.J.K. Jacob, "fNIRS as an Input to Brain Computer Interfaces: A Review of Research from the Tufts Human Computer Interaction Laboratory," *Photonics* (2019).

T. Shibata, A. Borisenko, A. Hakone, T. August, L. Deligiannidis, C.H. Yu, M. Russell, A. Olwal, and R.J.K. Jacob, "An Implicit Dialogue Injection System for Interruption Management," *Proc. Tenth Augmented Human International Conference* (2019).

L. Hirshfield, D. Bergen-Cico, M. Costa, R.J.K. Jacob, S. Hincks, M. Russell, "Measuring the Neural Correlates of Mindfulness with Functional Near-Infrared Spectroscopy," *Empirical Studies of Contemplative Practices* (2018).

L. Hirshfield, R. Gulotta, S. Hirshfield, S. Hincks, M. Russell, R. Ward, T. Williams, and R. Jacob, "This is Your Brain on Interfaces: Enhancing Usability Testing with Functional Near-Infrared Spectroscopy," *Proc. ACM CHI 2011 Human Factors in Computing Systems Conference*, ACM Press (2011).