

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 EEG and fNIRS 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, where I practiced Yoga and Zen meditation; I taught Yoga there, and led groups of up to 25 in preparing and cleaning the monastery for groups of up to 100 people.

PUBLICATIONS

A. Bosworth, M. Russell, and R.J.K Jacob, "fNIRS as an Input to BrainComputer Interfaces: A Review of Research from the Tufts HumanComputer 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).

