Matthew Russell, PhD

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Computer Scientist specializing in human-computer interaction and brain-computer interfaces. Expertise in ETL pipelines, statistics, and machine learning for studies with neurophysiological data. Strong background in DevOps and cloud computing complemented by proven experience in industry collaboration and teaching.

Education

01/20 – 05/25	**PhD**, *Computer Science*, Tufts University
09/17 – 12/19	**MS**, *Computer Science*, Tufts University
09/07 – 05/11	**BA**, *Computer Science & English Literature*, Hamilton College

Technical Skills

Languages	Python, R, C++, Bash, JavaScript, MATLAB
Libraries	Pandas, NumPy, SciPy, Seaborn, Scikit-learn, MNE-Python
Statistics	Linear Regression, GLM, ANOVA, Mixed Effects, Non-Parametric, and Bayesian Modeling
ML Models	Logistic Regression, Naive Bayes, Random Forest, XGBoost, SVM, Neural Nets, LLMs
ML Eval	F1, AUC, Confusion Matrices, Cross-Validation, Monte Carlo Testing
DevOps	Docker, GitLab CI/CD, GitHub Actions, AWS, Digital Ocean, GCP, Wasabi
Databases	SQL (MariaDB, PostgreSQL)

Experience

06/25 – **Postdoctoral Scholar**, *Tufts University*, Human-Computer Interaction Lab
- Led a project evaluating cognitive load in standing and walking conditions using combined EEG and fNIRS systems
- Managed and mentored two PhD students in the HCI lab

01/20 – 05/25 **PhD Researcher**, *Tufts University*, Human-Computer Interaction Lab
- Built a real-time brain-computer interface using fNIRS and machine learning to differentiate among cognitive states based on brain network activity
- Explored low-cost EEG for BCI in the contexts of chess and cognitive psychology
- Evaluated a framework for assessing neurological activation from very-low-frequency oscillations of cerebral hemodynamics

09/23 – 12/24 **Research Lead**, *Microsoft Research & Tufts University*
- Designed and implemented two studies on neurophysiological responses to LLM interaction
- Led collaborative research with Microsoft team members in weekly stakeholder meetings
- Analyzed fNIRS, Empatica E4, and NASA-TLX in Python and R with mixed-effects modeling

05/23 – 08/23 **Lecturer**, *Tufts University*, Data Structures in C++
05/20 – 08/20
- Taught 69 students over two summer semesters
- Excellent teaching evaluations (4.39/5.0) above department average (3.90/5.0)
- Implemented CI/CD pipelines, Docker infrastructure, and an autograder for the course

09/17 – 05/23 **Teaching Assistant**, *Tufts University*, Computer Science
- Supported courses including Human-Computer Interaction, Computer Graphics, Cybersecurity, Introduction to Computer Science, and Concurrent Programming

06/16 – 09/17 **Research Assistant**, *Syracuse University*, CARE Lab
- Developed data processing pipelines for electroencephalography research in MATLAB
- Taught programming fundamentals to PhD researchers in psychology

03/15 – 06/16 **Web Developer & Yoga Instructor**, *Syracuse University*, Hendricks Chapel
- Maintained the web portal and provided yoga instruction for the Stress-Reduction Room

06/11 – 01/15 **Monk & Yoga Instructor**, *Dai Bosatsu Zendo*, Kongo-Ji
- Ordained Zen Buddhist Monk; taught daily yoga classes (200-hour certified instructor)