

Trenton Wirth

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Perceptual-Motor Data Scientist

I am a world expert in the computational modeling and analysis of human perception and action, with an ever-growing technical skillset enabling me to introduce novel research methods to look at data in completely new ways. I have a talent for explaining intricate experimental results to a broad audience and am passionate about mentoring junior researchers.

Skills

General

Mentorship, project management & agile methods, professional scientific writing and verbal communication

Research

Experimental design, data visualization, statistical analysis, predictive modeling, data engineering and analysis

Programming Languages & Software

Python, SQL, R, MATLAB, Unity(C#), HTML/CSS, Markdown, GitHub, Microsoft Suite (Excel, PowerPoint), Adobe Suite

Work Experience

Post-Doctoral Researcher, Northeastern University (2020-Present)

- Created a new experimental paradigm resulting in other universities adopting my research methods
- Generated novel research questions about human perception and movement, implementing a variety of analyses and [unique 3D data visualization](#) across 2 conference presentations to vision scientists and roboticists
- Data engineered a data processing pipeline in python, producing code used by the whole lab to process, store, and analyze 3D motion capture data, eye tracking, and custom Unity Engine output
- Co-Founded a non-profit to leverage computer vision into building free and open source motion capture for everyone (*FreeMoCap* | <https://freemocapfoundation.org>), creating one of the most competitive forces in the future of markerless motion capture
- Built a pipeline to track and analyze user behavior for *FreeMoCap*, communicating to engineering team live user trends and needs; this led to the development of a GUI, and “one-click” user pipeline
- Project managed 3 junior researchers conducting validation studies, resulting in 3 conference presentations and research that lead to successful medical school and graduate school applications
- Worked with clients in Europe and the USA to set up data collection and analysis pipelines for motion capture
- Developed a research plan for a client of *FreeMoCap's* to address a top initiative at a world renown robotics company, resulting in an invited in-person pitch to the CEO (success pending)

Graduate Student Researcher, Brown University (2014-2021)

- Designed experiments that answered cross-species questions in biological collective motion by implementing computational models that predicted and simulated crowd behavior, resulting in 4 written research articles and 8 conference presentations
- Developed a design guide for data visualization of human crowd data in Virtual Reality experiments, impacting data visualization across the bodies of work of many researchers
- Conducted research as a part of a team generating ~1 Million dollars in NIH & NSF Grant funding
- Created a research pitch for Hyundai, alongside fellow graduate student, and won a cash award for a plan to study human control of flying cars
- Mentored 5 undergraduate students and 5 junior graduate student researchers across departments, providing guidance in experimental design, execution, and analysis, as well as career planning

Education

PhD in Cognitive Science, Brown University | Providence, RI | February 2021

BA in Philosophy *Summa Cum Laude* & BS in Psychology *Cum Laude*, University of Cincinnati | Cincinnati, OH | April 2014