

Jefferey S. Mentch

PHD CANDIDATE | NEUROSCIENCE AND APPLIED MACHINE LEARNING

Cambridge, MA

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Experience

MIT, Senseable Intelligence Group

Cambridge, MA

DOCTORAL RESEARCHER

Sep. 2020 - Present

- Applied data-driven machine learning approaches to large open-access naturalistic neuroimaging datasets to better understand brain-based differences in audiovisual perception in clinical populations like autism.
- Curated large datasets of child speech recordings for READnet, a multi-institutional Kaggle-style challenge aimed to improve the accuracy of speech recognition technology and accelerate early detection and prevention of reading challenges in children.
- Co-developed an end-to-end neural network to generate acoustic impulse responses from images of environments.

MIT, Kanwisher Lab | Dartmouth College, Robertson Lab

Cambridge, MA

LAB MANAGER | TECHNICAL ASSOCIATE

Sep. 2017 - July 2019

- Developed a cutting-edge VR eye-tracking pipeline from the ground up to study visual salience and attention patterns in autism, driving new insights into atypical perception. Led data-collection across sites nation-wide.
- Analyzed attention dynamics using gaze data, 360° imagery, and machine learning models to uncover behavioral biomarkers.
- Coordinated a pharmaceutical study exploring the role of GABA in binocular rivalry with implications for autism.

Dartmouth College, Bregman Media Labs

Hanover, NH

GRADUATE RESEARCHER, TEACHING ASSISTANT

Sep. 2015 - Sep. 2017

- Designed novel neural encoding models to reconstruct music stimuli directly from fMRI brain data.

Abington Neurological Associates, Clinical Trial Center

Willow Grove, PA

CLINICAL RESEARCH COORDINATOR

Sep. 2014 - Aug. 2015

- Coordinated phase II and phase III clinical trials of investigational new drugs for the treatment of Alzheimer's disease.

The Pennsylvania State University, Deep Sea Lab

University Park, PA

RESEARCH ASSISTANT - MARINE BIOLOGY

Jan. 2013 - Aug. 2014

- Conducted multivariate statistical analysis using R and ArcGIS to assess the impacts of the Deepwater Horizon oil spill.

QuantTera, R&D Microelectronics Company

Scottsdale, AZ

NSF REU INTERN, SEASONAL TECH

Apr. 2011 - Jan. 2013

- Investigated novel wafer bonding techniques for semiconductor devices; exhibitor at 2013 Consumer Electronics Show.

Children's Hospital of Philadelphia, Center for Applied Genomics

Philadelphia, PA

RESEARCH INTERN - PROTEOMICS

Summer 2011

- Delineated DcR3 signaling pathways using pharmacological inhibitors to uncover the proteomics of IBD.

Education

Harvard University

Cambridge, MA

DOCTOR OF PHILOSOPHY, SPEECH AND HEARING BIOSCIENCE AND TECHNOLOGY (SHBT)

Expected 2025

- **Coursework:** Applied Machine Learning, Perception, Neural Coding of Sound, Acoustics, Biology of the Inner Ear

Dartmouth College

Hanover, NH

MASTER OF ARTS, DIGITAL MUSICS

June 2017

- **Coursework:** Neuroscience of Music, MVPA, fMRI, EEG, Music Information Retrieval, Sonification

The Pennsylvania State University

University Park, PA

BACHELOR OF SCIENCE, BIOLOGY

May 2014

- Minor in Music Technology, Deans List

Skills

Software

Python, MATLAB, bash, Unity/C#, p5.js, MaxMSP, Adobe Creative Suite, LaTeX, ArcGIS, Logic Pro, Ableton Live, Pro Tools

GRE

170/170V, 167/170Q

Hobbies

Music Production, Audio Post Production, Podcast Editor (OHBM Neurosalience), Tennis