

David R. Connell

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Research engineer looking to use advancements in computer technology and statistical learning to better understand learning and memory. Applying to PhD programs to maximize my capabilities for a research oriented career.

EDUCATION

Master of Science, Biomedical Engineering

Illinois Institute of Technology, Chicago, IL

Relevant Coursework: Random Signal Analysis, Biostatistics, Quantitative Physiology

December 2017

GPA: 3.88

Bachelor of Science, Bioengineering

Miami University, Oxford, OH

Relevant Coursework: Biomedical Signal Analysis, Molecular Biology, Biochemistry

December 2015

GPA: 3.42

MASTER THESIS

Using an Apple Watch for detection and prevention of Sudden Unexpected Death in Epilepsy (SUDEP)

- Detects the onset of SUDEP during sleep by collecting and processing pulse and motion data.
- Calculates test statistics in real time to determine whether user is in normal or seizure state.
- Sends notifications to nearby caretaker to intervene.
- Marks events and stores data on database for future SUDEP research.
- Wrote python module for accessing database.

EXPERIENCE

Senior Research Engineer: Rush University Medical Center

Rush Alzheimer's Disease Center

2018–present

- Developed pipelines for automatically processing data added to a server.
- Reverse engineered signals to allow continuation of data collection with new devices.
- Designed Neural Networks for predicting onset of Alzheimer's disease
- Used machine learning techniques to detect Atrial Fibrillation.

Graduate Teacher Assistant: Illinois Institute of Technology

Department of Biomedical Engineering

2016–2017

- Physiology Lab
- Instrumentation and Measurement Laboratory
- Bioelectronics Laboratory

Fall 2017

Spring 2017

Fall 2016

Designed lab protocols, wrote programs, graded papers, setup lab instruments, held office hours, and tutored.

Student Research Assistant: Miami University

Department of Electrical and Computer Engineering

2015

- Derived algorithm for monitoring ECGs in MATLAB.
- Algorithm for automated detection of arrhythmia and ECG annotation.
- Found R-R interval, P-waves, T-waves, and QRS-complexes.
- Looked for missing waves and high or low heart rates.

Summer Student Research Assistant: Ohio State University Medical Center

Anesthesia Research Lab

2012,2013,2016

- Presented current anesthesia monitoring systems to anesthesiology staff.
- Wrote programs in VBA to modify Excel files.
- Retrieved data for studies on perioperative pressure ulcer prevention, foreign body ingestion by federal inmates, and the affects of tranexamic acid on blood loss during hip replacement surgery.

COMPUTER LANGUAGES

MATLAB, Julia, Bash, Lisp, Python, Swift, \LaTeX