

# 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

- 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.

2018–present

### Graduate Teacher Assistant: Illinois Institute of Technology

Department of Biomedical Engineering

- Physiology Lab
- Instrumentation and Measurement Laboratory
- Bioelectronics Laboratory

2016–2017

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

- 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.

2015

### Summer Student Research Assistant: Ohio State University Medical Center

Anesthesia Research Lab

- 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.

2012,2013,2016

## COMPUTER LANGUAGES

MATLAB, Julia, Bash, Lisp, Python, Swift, L<sup>A</sup>T<sub>E</sub>X