

# David R. Connell

david\_r\_connell@rush.edu | davidrconnell.github.io | 614.558.1522 | Chicago, IL

*Research engineer looking to use advancements in computer technology and statistical learning to better understand biological and artificial learning. Applying to PhD programs to maximize my capabilities in 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, Python, Bash, Lisp, Swift,  $\text{\LaTeX}$