

# JOSEPH D VIVIANO

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## EXPERIENCE

**My mission is to transform my love of biomedical science into health care technologies that scale.** I've demonstrated the consistent ability to take the lead on large projects, learn the necessary skills, and deliver results. I previously managed the development of a biomedical data management system and treatment-outcome prediction tools for psychiatric patients using MRI scans. Now I'm studying deep learning at the Mila Québec AI Institute and seek to expand into other areas of medical technology.

### Research Methods Specialist

2014–17

Kimel TIGRlab, Centre for Addiction and Mental Health

- Managed the design & implementation (team of 5) of a sophisticated data management platform used daily by researchers (team of 20).
- Invented an accurate machine learning test that identifies vulnerable patients, & directed 2 other similar successful projects, including 1 deep learning project.
- Managed R&D (team of 3) of quality assurance tools that repair corrupted data & detect critical hardware failures.
- Led R&D on multiple novel analytic approaches that have guided the majority of the lab's research during my tenure.
- Lead developer of production analysis code used by our scientists.
- Mentored scientists, post docs, graduate students, & engineers.
- Managed a 22-node compute cluster.
- Designed & contributed key analysis, writing, & tools for 2 successfully funded grants & 7 published papers.

### Data Analyst

2013–14

CANN Lab, York University

- Architect of a custom platform for data pipeline development, now used in multiple research institutions.
- Responsible for maintaining a fleet of 5 computers.
- Mentored graduate students in neuroimaging analysis approaches.
- Designed & contributed key analysis & tools to 2 published papers.

### Graduate Student

2011–13

Schneider Lab, York University

- Successfully identified a small region of the human thalamus never before observed in a living person using a new high-resolution imaging approach & unique visual stimulus.
- Portions of master's thesis published in the Journal of Neuroscience.
- Led 11 labs on biology & statistics including evaluations & assessments.
- Designed & contributed key analysis & tools to 3 published papers.

## RESEARCH

**Publications:** I've led 3 complete research projects as first author & contributed crucial analysis or direction to an additional 15.

**Precision Medicine:** I invent methods for extracting new medical knowledge from biological data.

**Deep Learning:** I'm passionate about the relationship with neuroscience, as well as the numerous applications to medical data.

## TECHNOLOGIES

### Python

Proficient

Numpy, scipy, pandas, scikit-learn, pytorch, tensorflow.

### MATLAB

Proficient

### R

Intermediate

### Unix Administration

Intermediate

Webservers, virtualisation, & containerisation.

### C

Familiar

### Java

Familiar

### SQL

Familiar

## EDUCATION

**MSc. Computer Science, Professional** 2018–  
Mila, Université de Montréal, Montréal, QC

**Certified System Administrator** 2016  
Linux Foundation

**MSc. Biology, With Distinction** 2011–13  
York University, Toronto, ON

**BSc. Psychology, Hons.** 2005–09  
Queen's University, Toronto, ON

## COURSES

### Deep Learning Specialization

deeplearning.ai, Coursera

### Neural Networks for Machine Learning

Coursera

### Hadoop Platform & Application Framework

Coursera

### Machine Learning

Coursera

### Intro to High Performance Computing

SciNet, University of Toronto