# JOSEPH D VIVIANO

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## EXPERIENCE

**I want to take the skills I've developed working with disorganized clinical and neuroscientific data and apply them to make the systems we all rely on more efficient.** 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 industries.

**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, and building systems to tackle new problems.

## 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

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