

JOSEPH D VIVIANO

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Mila Quebec AI Institute
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EXPERIENCE

I love user-focused technology. I've worked with psychiatrists to develop biomarkers for treatment response, radiologists to detect cancer, Google to price ads, and a hedge fund to trade equities. I've consistently and rapidly adapted to new domains and delivered results.

Applied Research Scientist

2020–Now

[Mila Technology Transfer](#), [Mila Quebec AI Institute](#)

- Collaboration with Mila researchers on medical applications and biologically-inspired AI.
- Forgery detection project with emphasis on out of distribution generalization.
- R&D on momentum trading strategies for equities with the [CDPQ](#).
- Object-detection in edge devices and for document forgery detection.
- Use of attention mechanisms for composable representation learning.
- Consulting with Mila partners on point cloud semantic segmentation and cognitive testing.

Research Intern

2020

[Google](#), [Smart Ad Relevance System Predicted Click Through Rate Team](#)

- Uncertainty estimation for predicted click through rates (pCTR).

Research Intern

2019–2020

[Mila Quebec AI Institute](#)

- Research on explainable AI: whether saliency can be relied on to [diagnose generalization failures](#).
- Contributed to the open-source [torchxrayvision](#) project.

Research Intern

2019

[Imagja Cybernetics](#)

- Cancer localization without segmentations, and multimodal classification combining images with clinical notes.

Research Methods Specialist

2014–17

[Kimmel TIGRLab](#), [Centre for Addiction and Mental Health](#)

- Developed two published machine learning tools that identify vulnerable [schizophrenia](#) and [Alzheimer's](#) patients.
- Managed the design & implementation (team of 5) of a [data management platform](#) and [quality assurance tools](#) used by team of 20.
- Contributed to 2 successfully funded grants & 13 published papers.

Data Analyst

2013–14

[CANN Lab](#), [York University](#)

- Biomarker of [reduced executive function in aging](#).

Graduate Student

2011–13

[Schneider Lab](#), [York University](#)

- MRI of the [human visual input](#) and [feedback](#) systems.

RESEARCH

Publications: I'm an [active researcher](#) with an h-index of 11 and 22 publications.

Precision Medicine: Biomarker development for patient-tailored treatments.

Deep Learning: Representation learning for robust and explainable models, multimodal learning, attention mechanisms.

EDUCATION

MSc. Computer Science, Machine Learning Specialization 2018–20

[Mila](#), [Université de Montréal](#), Montréal, QC

MSc. Biology, Neuroscience Specialization, With Distinction 2011–13

[York University](#), Toronto, ON

BSc. Psychology, Hons.

2005–09

[Queen's University](#), Toronto, ON

TECHNOLOGIES

Python

Proficient

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

MATLAB

Intermediate

R

Intermediate

Unix Administration

Intermediate

Webservers, virtualisation, & containerisation.

C

Familiar

Java

Familiar

SQL

Familiar

TEACHING

Introduction to Deep Learning

2019

[McGill BrainHack Summer School](#) & [MAIN Conference Workshop](#)

Python for Neuroimaging

2015

[Centre for Addiction and Mental Health](#)

EXTRACURRICULAR

Deep Learning Specialization

2018

[deeplearning.ai](#), [Coursera](#)

Certified System Administrator

2016

[Linux Foundation](#)

High Performance Computing

2014–16

[SciNet](#), [University of Toronto](#)