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 pension fund to trade equities.

Applied Research Scientist 2020–Now
Mila Technology Transfer, Mila Quebec AI Institute

- Collaboration with Mila researchers on medical applications, ethical language models, 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
Imagia Cybernetics

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

Research Methods Specialist 2014–17
Kimel 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

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