JOSEPH D VIVIANO

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Deep Genomics
6666 Rue Saint Urbain St, Montréal, QC

EXPERIENCE

ML Research Scientist 2021–2022
Deep Genomics

- Self-supervised learning (auto-regressive and masked-language modelling) for biological sequence representations.
- Multi-modal methods facilitating biological sequence-to-sequence models to generalize to novel cell types.
- Anomaly detection pipeline for our drug screening platform.

Applied Research Scientist 2020–2021
Mila Technology Transfer, Mila Québec AI Institute

- Research on medical applications, ethics of language models, and modular deep learning.
- Deep-learning driven equity momentum trading (CDPQ) and robust representation learning for digital forgery detection (Jumio).

Fellow 2021
PhD to VC, Fifty Years

- Experience sourcing strong deep-tech companies ready for seed or pre-seed investment, performed due diligence, & portfolio support.

Research Intern 2020
Google, Smart Ad Relevance System Predicted Click Through Rate Team

- Uncertainty estimation research for predicted click through rates.
- Produced research pipeline for future search ad pCTR research.

Research Intern 2019
Imagia Cybernetics

- Developed deep learning method for 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

- Biomarkers for vulnerable schizophrenia and Alzheimer's patients.
- Designed, built, and managed (team of 5) a data management platform 22-node compute cluster, and QA tools used by team of 20.

Data Analyst 2013–14
CANN Lab, York University

PROJECTS

What's In the Box? Undesirable content identifier for the Common Crawl.
TorchXRayVision Library for chest XRay datasets and models.

RESEARCH

Publications: I'm an active researcher with a h-index of 17.
Bio & Health: Genomics, biomarkers for precision medicine.
Deep Learning: Representation learning for robust and explainable models, multimodal learning, attention mechanisms.
Mentoring: Scientific mentor for Creative Destruction Lab Montréal since 2021.
Teaching: Computational methods and ML courses taught at CAMH, McGill BrainHack, and MAIN.
Paper Reviews: ICLR, NeurIPS Preregistration in ML Workshop, Biological Psychiatry, MIDL, & PLOS ONE

EDUCATION

MSc. Computer Science, Machine Learning Specialization 2018–20
Mila, Université de Montréal, Montréal, QC

- Research on whether saliency methods can be relied on to diagnose generalization failures of deep learning models.
- Coursework on Reinforcement Learning, Deep Learning, NLP, & CS Fundamentals.

MSc. Biology, Neuroscience Specialization, With Distinction 2011–13
Schneider Lab, York University, Toronto, ON

- Research using Magnetic Resonance Imaging of the human visual input and feedback systems.

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

TECHNOLOGIES

Python Proficient
Pytorch, tensorflow, numpy, scipy, pandas, scikit-learn.

Unix Administration Intermediate
Webservers, virtualisation, & containerisation. Linux Foundation certified system administrator.

R, C, Java, SQL, MATLAB Familiar

Compiled on September 28, 2022.