JOSEPH D VIVIANO

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EXPERIENCE

ML Research Scientist 2021–Now
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.

Scientific Mentor 2021–Now
Creative Destruction Lab Montréal

- Performed technical assessments of startups and provided feedback for a business and investor focused audience.
- Technical direction for startups in the NLP, CV, and ML for Bio spaces.

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

- I sourced, diligenced, and deep-tech pre-seed/seed stage companies, performed due diligence on them, & helped source technical talent.

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.

PROJECTS

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

RESEARCH & COMMUNITY

Bio & Health: Genomics, biomarkers for precision medicine.
Deep Learning: Representation learning for robust and explainable models, multimodal learning, attention mechanisms.
Teaching: Stats and ML courses taught at CAMH, McGill BrainHack, & 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, sklearn.

Linux Administration Intermediate
Linux Foundation certified system administrator.

R, C, Java, SQL, MATLAB Familiar

Compiled on September 29, 2022.