GUILLAUME LAM

guillaumelam.com
github.com/GuillaumeLam

NOTABLE PROJECTS

May 2023 - Present

Framework Researcher of an **Open-Source Software Library**
➢ '*PyS (Peace): Open-Source High Resolution Source Reconstruction for NeuroGenetic and NeuroDevelopmental Disorder Research*'
➢ [abstract](), github (tbd)
➢ Lead developer of python source reconstruction library
➢ PyS offers genetic enrichment tools to support neurogenetics and neurodevelopmental disorders research
➢ PyS supports open-sourced datasets such as HBN & NeuroVault

June 2022 - Dec 2022

Research Paper in submission to **Journal of Biomechanics**
➢ '*Estimating individual minimum calibration for deep-learning with predictive performance recovery: an example case of gait surface classification from wearable sensor gait data*'
➢ [paper](), [github]()
➢ Produced research paper investigating reported overestimation in performance of ML in multiple medical fields

2019 Nov-Dec

Finalist of Reproducibility Challenge of a **NeurIPS pape**r
- Ablation paper of NeurIPS paper exploring success of unsupervised learning of the representation of states for multiple atari games
- Inspected sensitivity of parameters published in a paper ([Link]() which includes our paper, code repository, run data, and original paper)

WORK EXPERIENCE

University of Montréal
Jan 2023 - Present

Graduate Student Researcher (Montréal, Qc)
➢ Supervised by Dr. Guillaume Dumas and co-supervised by Dr. Sarah Lippé
➢ (23/03) Contributed to CIHR Early Career Investigators grant for PPSP laboratory
➢ (23/02) Contributed to grant for NED laboratory
➢ (23/05-Present) Lead framework developer for source reconstruction library, PyS
➢ (23/04-09) Lead scientific pipeline processing architect for NED laboratory
➢ (23/03-06) Core organizer of [USS23](): UNIQUE Student Symposium 2023

University of Montreal

Jan 2022 - Dec 2022   **Research Assistant** (Montreal, Qc)
- ➤ Supervised by Dr. Philippe C. Dixon
- ➤ Developed DL model to predict Vicon data from Xsens data
- ➤ Devised protocol in collaboration with UoQ for synchronized dual data collection
- ➤ Collected data from participants (>150)
- ➤ Produced research paper submitted to research journal

MILA

June 2021 - Dec 2021   **Research Intern** (Montreal, Qc)
- ➤ Supervised by Dr. Irina Rish

Project Title: **Hebbian Liquid State Machine trained with RL**
- ➤ Investigation of combination of biological learning rules with the RL setting for spatio-temporal pattern learning
- ➤ Spawned the package: **LiquidStateMachine.jl**

2017 - 2019   **Software Developer Intern** at **Ericsson, Jive Communications, & Ormuco** (Montreal, Qc)
- ➤ Developed full-stack system for home security monitoring using **Javascript** frameworks (frontend), **database** technologies, and **Python** libraries (backend & ML)
- ➤ Assisted main service dev team by improving **deployment**, implementing **voicemail** NLP and developing **diagnostic tools**
- ➤ Implemented full-stack tasks and developed **AI algorithms** for closed-loop & self-healing environments

INDEPENDENT PROJECTS

2019 Nov	**Parallelized CNN** from scratch in **C++**, final project for a course
2018 Oct	**GIF Sentiment Analysis** with **McGillAi**, student run organization
2018 Jan	**Ai Tetris Player** at Conuhacks, **Hackathon**
2017 Nov	**Accident Predictor** at Code Jam, **Hackathon**
2017 Jan	**Face descriptor** at McHacks, **Hackathon**

TECHNICAL SKILLS

Programming Languages	Python – Julia – C(++) – Bash – GO - Java – JavaScript/NodeJS – Html/CSS – Perl
Libraries & Frameworks	Keras/Tensorflow – PyTorch – Keras/Tensorflow – MongoDB – Flask – OpenCV
Tools	Git – Docker – Kubernetes
OS	Linux – Windows – Mac
Spoken Languages	English, French; full professional proficiency for both

EDUCATION

Jan 2023 - (Dec 2028)	**University of Montreal**,
	PhD Psychology, Specialization: Computational Neuroscience
	Current CGPA: 4.1/4.3
Sept 2020 - Dec 2022	**University of Montreal**,
	MSc Computer Science, Specialization: AI
	CGPA: 4.3/4.3
	Memoire
Sept 2016 - Apr 2020	**McGill University**,
	B.Eng in Software Engineering
	CGPA: 3.5/4.0

REFERENCES

Available upon request