Quentin FRUYTIER

Ph.D. Candidate
UT Austin

M.Sc. & B.Sc. Graduate
McGill University

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Personal Website

Ph.D. Supervisors

Aryan Mokhtari
Sujay Sanghavi

M.Sc. Supervisors

Abbas Khalili
Tim Hoheisel

Programming Skills

Python (PyTorch & TensorFlow), C, C++, Matlab, and R.

Languages

Bilingual French (native) and English

Domain Knowledge

Transformers, CNN, Auto-encoders, Mixtures of Experts. EM Algorithm, SGD, Mirror Descent.

Education

UT Austin • Ph.D. in Electrical Engineering • 4.0/4.0 GPA	Expected 2027
McGill University • Masters in Mathematics • 4.0/4.0 GPA	August 2023
McGill University • Joint Honours Math & Comp. Sci. • 3.8/4.0 GPA	June 2021

Publications

Learning Mixtures of Experts with EM 2023-2024
Used equivalence between EM and Mirror Descent to obtain novel local convergence results. Proof of concept validation experiment on "FMNIST".

M.Sc. Thesis on EM Algorithm Fall 2021-Summer 2023
Comprehensive review of the EM algorithm's local convergence properties and its applications to mixture models.

Research Projects

Vision Transformers for Fast MRI 2023-2024
Conceptualization, implementation, and training of VITs to predict and fill in missing k-space lines as it relates to the "fastMRI Dataset".

Deep Learning for Traffic Prediction Winter 2021
Study of variants of Graph Neural Networks and Recurrent Neural Networks to capture the spatial and temporal dependencies of traffic data.

Work Experience

Data Science Intern at Nectar Summer 2021
Nectar Technologies Data Science *Montreal, QC*
Prototyped supervised (RNN) and unsupervised (Auto-Encoder) machine learning models on sensor data collected from within beehives to predict hive health.

Software Engineer Intern at Akamai Summer 2020
Akamai Technologies Image Manager *Ottawa, ON*

Software Engineer Intern at Matrox Summer 2019
Matrox Electronics Systems Ltd. Software Quality Assurance *Montreal, QC*

Teaching Experience

Teaching Assistant 2019-2022
Principles of Statistics 1, Calculus 2, Foundations of Programming (Python/ Java)
McGill University Department of Mathematics and Statistics *Montreal, QC*

Awards

Basdall Gardner Memorial Graduate Fellowship in Engineering Feb 2023 -
UT Austin fellowship for academic excellence

Graduate Excellence Fellowship Award May 2022
McGill University award for academic excellence

Tomlinson Engagement Award for Mentoring April 2019
McGill University award for assistant teaching in undergraduate classes.

J W McConnell Scholarship March 2017
McGill University Major Renewable Entrance Scholarship.