

Luca Monteferrante

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EDUCATION

Special Physics Graduate

McGill University

Aug. 2025 - Jan. 2026

Montreal, QC

Bachelor of Physics and Computer Science

McGill University

Aug. 2021 – May 2025

Montreal, QC

D.E.C. Honors Health Sciences

Dawson College

Sep. 2019 – May 2021

Montreal, QC

SKILLS

Language: English (First Language), French (fluent)

Programming Languages: **Python** (Matplotlib, NumPy, Pandas, PyTorch, PyCharm), **SQL**, **Java**, **C**, **C++**, **C#**, Linux, Bash, Command line, HTML, OCaml, Vim, LaTeX, Arduino libraries

Developer Tools: **Git**, **VS Code**, **Azure**, **Google Cloud**, **Power BI**, Excel, Visual Studio, **Microsoft Office**, Smartsheets, Jupiter Notebook, Overleaf, remote computing (SSH), SAP, Ariba, IntelliJ, Eclipse, Segment Anything Model (SAM), Docker, Unity

Computer Science skills: **Artificial Intelligence**, **Machine Learning** (NN, MLP, CNN, KAN), **Data Science**, **Data Analytics**, CI/CD Pipelines, **Database structure and creation**, Algorithm design, Algorithm analysis, Classification, Segmentation, **Data visualization**.

Physics Skills: Astrophysics, Quantum physics, Circuits, Signal processing, Electricity and Magnetism, Lagrangian and Hamiltonian dynamics, Mechanical physics, Physics of Heat and Waves.

EXPERIENCE

Research Assistant - Kai Wang Lab

Jan. 2025 - April 2025

- Built a **machine learning (ML)** Kolmogorov-Arnold Network (KAN) model in **python** with **pytorch** to decompose complex multi-variable functions into easily understandable functions.
- Wrote an accepted **research paper** as well as an accepted research proposal.
- Understood and **analyzed** the mechanics and **data** behind these KAN models
- Proposed fields to apply these models in the future, such as quantum tomography

Business Intelligence Intern - Abbvie

Summer 2024

- Leveraged H1 and **Power BI** to **analyze** HCP **data** and provide **insights** to our in-field team.
- Initiated **automating** the **market share graphs** to help **decrease the time and workload** of the BI team.
- Responsible for **graphical representations** of trends in the marketplace and **dashboards** to clearly **visualize important insights**.

Vendor Data Intern - Abbvie

Summer 2023

- Responsible for the overall **data management**, reclassification and organization process to better align with business needs, promote agility, and efficiency to internal users.
- Supported vendor creation and modification requests.
- Assisted with validating taxes and other important vendor information in preparation for Internal Audit.

PROJECTS

Trading Card Database Application | *SQL, Java, Bash, SSH, Git*

- Created a **database** in order to handle a trading card website.
- Used **SQL** to handle queries related to trading, selling, buying cards
- Java interface** in order for users to write Reviews, purchase, or sell cards.
- Made a relational schema and ER diagram.

AI Reversi/Othello Agent | *Python, Visual Studio, Git*

- Competed in an AI competition with 220 competitors and placed in 10th place.
- Designed core systems for my **AI agent** such as scoring, heuristics, and evaluation.
- Time efficient code** to evaluate all possible game-states within given turn time limit.

Histopathological Image Classification and Segmentation | *Python, Jupyter Notebook, Git*

- Created a **multi-label machine learning model** to classify tumors of histopathological images.
- Achieved test accuracy of **96.7%** among the histopathological images.
- Able to **detect and highlight** regions of tumors in the histopathological images