

Antoine Bonnet

Curriculum Vitae

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Education

Master of Computer Science

09/2022 – 07/2024

Swiss Federal Institute of Technology Lausanne (EPFL)

- GPA: 5.47/6.00, Specialization in Data Analytics, Machine Learning (ML) and Natural Language Processing (NLP)

Bachelor of Science in Joint Honours Mathematics and Computer Science

09/2019 – 05/2022

McGill University

- GPA: 3.92/4.00, First-Class Honours, Distinction (Top 25%)
- Relevant coursework: Machine Learning, Reinforcement Learning, Computer Vision, Data Science, Algorithms & Data Structures, Statistics, Probability, Vector Calculus, Abstract Algebra, Analysis and Graph Theory

Research

Research Engineer: Healthanea

02/2024 – 08/2024

Healthanea, an AXA-Microsoft spin-off

- Developed an industry-grade LLM pipeline in collaboration with Microsoft to summarize medical health records
- Conducted research on summary evaluation, including the generation of synthetic datasets through patient simulation.

Data Team Lead: Meditron

06/2023 – (current)

MLO & NLP Labs at EPFL

- Led the data team of *MEDITRON-70B*, currently the best open-source medical Large Language Model (LLM)
- Curated a large-scale medical corpus to adapt Llama 2 through continued pre-training, including a new open-source dataset of *Clinical Guidelines*, enabling robust fine-tuning for medical LLMs
- Coordinated real-world evaluations of Meditron and the creation of an adversarial benchmark with a panel of clinicians
- Created specialized instruction-tuning datasets for clinical decision support from clinical guidelines

Project Lead: MOOVE

06/2023 – (current)

MLO Lab at EPFL & iGH Lab at Yale University

- Led the development of the *MOOVE*, an open platform to collect data for reinforcement learning with doctor feedback and transparent doctor evaluation of medical LLMs in collaboration with health institutions like ICRC, CHUV, WHO

Project Lead: Medinote

09/2023 – 01/2024

NLP Lab at EPFL

- Created *MediNote*, a variant of Meditron trained to write clinical notes from patient-doctor conversations. MediNote beats all same-size baselines and is a lightweight, efficient and private competitive alternative to ChatGPT

Intern: Neural Network Regularization

09/2022 – 05/2023

Laboratory for Information and Inference Systems (LIONS)

- 'How to Train your 1-path-norm Regularized Deep Neural Network' paper presented at ICML 2023 workshop
- Empirical analysis of novel 1-path-norm neural network regularization for robustness and generalization.

Technical Skills

Natural Languages: French, English

Programming Languages: Python, Java, C, JavaScript, React, Scala, Matlab, Bash, OCaml, R, SQL

Developer Tools: Git, UNIX, Docker, Apache Spark, VSCode, AWS, Azure, Google Cloud, Google Colab, W&B

Libraries: PyTorch, TensorFlow, Huggingface, SciKit Learn, pandas, **Other Tools:** L^AT_EX, Midjourney, Photoshop

Awards

Undergraduate Student Research Award (\$9,000)

09/2021

Natural Sciences and Engineering Research Council of Canada (NSERC)

MES Excellence Bursary for Computer Science (\$1,000)

12/2020

McGill University