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Antoine Bonnet

Curriculum Vitae

Research & Work

Research Engineer 02/2024 – (current)

Healthanea, an AXA/Microsoft spin-off

- Developed an industry-grade LLM pipeline in collaboration with Microsoft to summarize FHIR medical health records

Development Lead: MOOVE 02/2024 – (current)

MLO Lab at EPFL & iGH Lab at Yale University

- Led the development of the *MOOVE*, an open platform for transparent doctor alignment and evaluation of medical LLMs in collaboration with medical and humanitarian organizations like ICRC, HUG, CHUV & WHO
- Built a chat interface and doctor feedback collection app from scratch in 3 months with no prior front-end experience
- Speaker at WHO, ICRC & CHUV on medical AI topics like LLMs, reinforcement learning, and doctor alignment

Data Team Lead: Meditron 06/2023 – 02/2024

MLO & NLP Labs at EPFL

- Led the data team of *MEDITRON-70B*, now the leading 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
- Generated specialized instruction-tuning datasets for clinical decision support from clinical guidelines

Project Lead: Medinote 09/2023 – 01/2024

NLP Lab at EPFL

- Trained *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

ML Research Intern 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.

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

Technical Skills

Natural Languages: French, English
Programming Languages: Python, JavaScript, C, Java, React, Scala, Matlab, Bash, OCaml, R, SQL
Developer Tools: Git, UNIX, Docker, Apache Spark, VSCode, AWS, Azure, Google Cloud, Google Colab, W&B
Libraries: LangChain, PyTorch, TensorFlow, React, Huggingface Transformers **Other Tools**: LaTeX, Midjourney

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