Juan David Guerra

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Education

- **MILA - Quebec AI Institute & Polytechnique Montréal** — Montreal, QC
  M.A.Sc Software Engineering — *Sep 2024 - May 2026*
  - **Cumulative GPA:** N/A
  - **Principal Investigator:** Marco Bonizzato - Polytechnique Montréal Department of Biomedical Engineering
  - **Research Area:** Hierarchical Gaussian Processes and other ML techniques with applications to Neuroprosthetics
- **McGill University** — Montreal, QC
  B.Sc. First-Class Honours Computer Science with a Minor in Neuroscience — *Sep 2020 - May 2024*
  - **Cumulative GPA:** 3.73 / 4.0
  - **Relevant Coursework:** Honours Thesis in Computer Science; Reinforcement Learning; NLP; Statistics; Artificial Intelligence; Applied Machine Learning; Honours Algorithms & Data Structures; Discrete Math;
  - **Prizes and Awards:** Quebec Excellence Bursary for Computer Science (2021);
- **Upper Canada College** — Toronto, ON
  International Baccalaureate Diploma & Ontario Secondary School Diploma — *Sep 2015 - May 2020*
  - **Grade-Point Average:** 35 / 42 (IB) and 94% (OSSD)
  - **Prizes and Awards:** Lang Scholar Prize for Athletic and Academic Achievement (2020); General Proficiency Award for Academic Standing (2019); Cayley Waterloo Math Contest Certificate of Distinction (2019);

Other Research Experience

- **Department of Computer Science** — Montreal, QC
  McGill University, MILA - Quebec AI Institute — *June 2024 - Ongoing*
  - Research collaborator at Professor Golnoosh Farnadi's EQUAL Lab
  - Conducted an empirical, in-depth analysis of Large Language Models (LLMs) and their training dynamics
  - Paper submitted to ICLR surrounding the rise of hallucinations in LLMs throughout training, why this occurs, and how to mitigate their effect
- **Department of Biomedical Engineering** — Montreal, QC
  McGill University, MILA - Quebec AI Institute — *February 2023 - Ongoing*
  - Undergraduate researcher under the supervision of Professor Danilo Bzdok.
  - Using machine learning models to take brain activation (fMRI) and human brains to predict and understand the task the subject was performing
  - Libraries used: NIlearn; Numpy; Pandas; Matplotlib; Scikit learn.
- **Department of Physiology** — Montreal, QC
  McGill University — *June 2022 - February 2023*
  - Working as a summer researcher and research assistant under the supervision of Professor Erik Cook
  - Investigating correlations between visual stimuli and activation in mouse brains using statistical techniques and data processing
  - Z-plane motion correction for two-photon imaging of neural activity in awake behaving mice

Relevant Experience

- **Mental Health Director** — Montreal, QC
  McGill Science Undergraduate Society — *May 2021 - May 2024*
  - Researching mental health issues, policies, and activities among North American Universities
  - Organizing projects (e.g., mentorship programs) to improve students' mental health at McGill University
- **Technical Skills**
  Python; Java; MIPS; Matlab; C; Bash; Git; UNIX; OOP; Sci-Kit Learn; PyTorch; Pandas
- **Concentrations**
  Artificial Intelligence; Machine Learning; Applications of ML; Computational Neuroscience; Data Science