HAILEY BORIEL

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA **May 2026**

- Candidate for Master of Engineering in Electrical Engineering and Computer Science.

Massachusetts Institute of Technology, Cambridge, MA **May 2025**

- Candidate for Bachelor of Science in Artificial Intelligence and Decision Making; 4.9 GPA
- Relevant coursework: Graduate Machine Learning, Computer Vision, Natural Language Processing, Statistics Applications & Computation, Algorithms and Data Structures, Signal Processing, Optimization.

SKILLS

- **Programming:** Python, MATLAB, PyTorch, Keras, TensorFlow, Julia, C++, JavaScript
- **Database:** MongoDB
- **Languages:** English, French (B1)

RELEVANT EXPERIENCE

SAP Labs France, Mougins, France **June-August 2024**
Data Science Intern

- Utilized python to create an API to extract the delta between customer-generated technical reports.
- Explored prompt engineering techniques to generate technical summaries of delta using large language models.
- Finetuned an adapter-fitted LLM to improve summary generation using a custom non-supervised dataset.
- Researched and compiled summary evaluation metrics to measure performance of finetuned model between iterations.

MIT Buildings Decarbonization, MIT, Cambridge, MA **September-May 2023**
Student Researcher

- Drew upon Machine Learning knowledge to modify regressive model of MIT's building-specific thermal system energy waste in Julia.
- Utilized Python to perform data pre-processing and to create visualizations.

HHC Medical, BioInnovation Institute, Copenhagen, Denmark **June-August 2023**
Simulation Engineer Intern

- Utilized python to create user-friendly application performing image processing on tiled microscopy images including image stitching, normalization, denoising, nuclei detection, and conversion to RGB color space.
- Employed Ansys HFSS to create a fully parametrized 3D model of a dielectric-filled horn antenna and lens.
- Set up analyses and run simulations of electromagnetic waves in antenna using Ansys Electronics Desktop.

KamLAND, MIT, Cambridge, MA **June-July 2022**
Student Researcher

- Scraped X-ray binary star system activity data from public web sources.
- Utilized Python to organize raw data and create methods to search for neutrino events from detector data corresponding with high X-ray activity periods.
- Analyzed co-occurrences and data patterns to discover insights about the production of neutrino particles.

Weblab, MIT, Cambridge, MA **January 2022**
Participant

- Utilized Node.js, MongoDB and React in a team of two to develop the backend and frontend of a website aimed at connecting MIT students through chat based on user interests.

Summer Science and Robotics Workshop, Vieux-Fort Comprehensive Secondary School, Saint Lucia **July 2018**
Participant

- Utilized C++ to program a microcontroller to implement distance sensors, Bluetooth module, and LED display.
- Created an android application to control and receive data wirelessly from electronics set-up.
- Wrote MATLAB scripts to solve linear algebra problems.

LEADERSHIP

Lab Assistant in Signal Processing, MIT, Cambridge, MA **September 2024-present**

Mentor in Physics Mentoring Program, MIT, Cambridge, MA **2022-2024**