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Tess Breton

Paris, France – Personal website – tess.breton@polytechnique.edu – GitHub – LinkedIn
Final year student at École Polytechnique – MVA Master (Matheamtics, Vision, Learning) student

Education

École Normale Supérieure Paris-Saclay Sept 2024 - July 2025
Master of Science (*Master 2*), MVA (Mathematics, Vision, Learning)

- **First semester courses:** Convex Optimization and Applications in Machine Learning, Computational Optimal Transport, Computational Statistics, Reinforcement Learning, Geometric Data Analysis, Object Recognition and Computer Vision, Probabilistic Graphical Models and Deep Generative Models.

École Polytechnique Sept 2021 - July 2025
Master of Science (*Cycle Ingénieur*), Applied Mathematics GPA: 3.94

- **Main courses**: Statistics, Algorithm Design and Analysis, Random Modeling, Deep Learning in Computer Vision, Optimization and Control, Operations Research, Game Theory, Random Models in the Environment and Evolution, Statistics in Action.
- **Projects**: Weakly-supervised image classification challenge – Reasearch papers study and implementation (Accelerated gossip algorithms, Fairness with Wasserstein barycentres).

Lycée Louis Le Grand Sept 2019 - July 2021
Bachelor of Science (*Classe Préparatoire MPSI-MP**), Mathematics and Physics GPA: 4.0

- Intensive two-year preparation for the entrance exams to France's top engineering schools.
- **Project**: Simulated annealing and Markov chains, applied to the Traveling Salesman Problem (TSP).

Work Experience

Columbia University, Irving Institute for Cancer Dynamics (IICD) New York, United States
Research Intern, Alliance Program Avril 2024 - July 2024

- Worked on modeling extra-chromosomal DNA dynamics in cancer cell populations, using Moran stochastic processes. Internship supervised by Simon Tavaré and Khanh Ngoc Dinh.
- Performed Approximate Bayesian Computation to infer model parameters for selection and timing.
- Coded in Python – GitHub repository and report.

École Polytechnique Palaiseau, France
Tutor for Bachelor Students in Asymptotics Statistics Sept 2023 – Dec 2023

- Weekly 2-hour tutoring session with third year Bachelor Students. Exam preparation, basic exercises.

GE HealthCare Buc, France
R&D Data Scientist Intern June 2023 – Sept 2023

- Worked on evaluating the robustness of a Deep Learning algorithm (Retina U-Net) for lung nodule detection and segmentation on CT scan images.
- Studied the robustness of the model output to the presence of metal artifacts and Gaussian noise.
- Retrained the model using augmented data (with several metal artifacts and different levels of noise).

Skills & Interests

Languages: French (native), English (C2), German (B2-C1), Spanish (B1-B2)
Programming: Python, R, Java, SQL, C++
Tools: Git, LaTeX

Hobbies: Piano, Swimming, Drawing