Bruny SOUTARSON

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RESEARCH INTERESTS

My research interests include signal processing and computer vision, with potential applications in the medical field. Specifically, I aim to use AI to better understand the functioning of the human brain.

EDUCATION

2024-2025 **Research Year in Artificial Intelligence**
École Normale Supérieure Paris-Saclay (ENS Paris-Saclay) – Gif-sur-Yvette, France

- Relevant coursework: Foundations of AI, AI for Images and Videos, AI for Network Modeling, AI for Time Series, Robotics (from the MVA master's program).

2023-2024 **Master of Science, Mathematics**
Université Gustave Eiffel – Champs-sur-Marne, France

- Relevant coursework: Advanced Probabilities, Statistics, Statistical Learning, Optimization, Functional Analysis, Algebra.

2018-2023 **Bachelor of Science, Mathematics and Computer Science**
Université Gustave Eiffel – Champs-sur-Marne, France

- Mathematics: Fundamental courses in Algebra, Analysis, Topology, Probability and Statistics. Computer Science: Databases, Automata and languages, Programming in Python, C, R.

PROFESSIONAL EXPERIENCE

September 2022 (60 hours) **Teaching Assistant in Calculus**
Université Gustave Eiffel – Champs-sur-Marne, France

- Preparatory tutoring for the bachelor's degree. Course reminders and exercises corrections for two classes of fifteen first-year students.
- Topics covered: real and complex numbers, sums and polynomials, real numerical functions and sequences, integration, basics of probability.

RESEARCH PROJECTS

From Sep 2024 **Predict visual stimuli from MEG recordings of human brain activity**
École Normale Supérieure Paris-Saclay (ENS Paris-Saclay) – Gif-sur-Yvette, France

- The goal of this project is to predict whether the subject has been shown the picture of a face or a scrambled image based on MEG.

Feb-Jun 2024 **Energy distance kernel for shape registration**
Laboratoire d'Informatique Gaspard-Monge (LIGM) – Champs-sur-Marne, France

- The aim of this project was to assess the relevance of the Energy Distance Kernel for medical image registration, as this kernel can reduce complexity from quadratic to quasi-linear in this context. We wanted to see how it performed on simple shapes.

Mars-May 2023 **Analysis of EEGs time series from epilepsy patients**
Laboratoire d'Informatique Gaspard-Monge (LIGM) – Champs-sur-Marne, France

- The goal of this project was to study the brain activity of patients with epilepsy and detect anomalies. To do this, we analysed the electroencephalographic activity and attempted to identify spikes in the data.

ABOUT ME

I am passionate about learning new things, and outside of work, I love running, watching anime, playing basketball.

SKILLS

Programming: Python (scikit-learn, PyTorch), C
Soft Skills: Teamwork, problem-solving

LANGUAGES

French: Native
English: Fluent