

Paul Mortamet, Applied Mathematics student

Paris, France | paul.mortamet@polytechnique.edu | +33 6 95 09 09 77

PROFILE

Born in Mexico, I grew up in the French countryside (Gers) before successfully entering Ecole Polytechnique in 2019. I am now a 3rd Year student specializing in **Applied Mathematics and Computer Science**. This strong scientific basis brought me to move toward **Artificial Intelligence** by learning its **cognitive** inspirations, optimizing with **Mathematics** and creating with **Machine Learning**.

EXPERIENCE

- Sept. 2021 - Dec. 2021 **Research Project, LIMSI, Paris (France)** *supervized by François Yvon*
After going through numerous papers, I created my own solution for the word alignment problem called **Optimal Transport for Cross-lingual Word Alignments**.
- Optimal Transport
 - FastText
 - Wasserstein GAN & EMDOT
 - Cross-lingual natural language processing
- Jun. 2021 - Aug. 2021 **AI Research Intern, Fujitsu, Tokyo (Japan)**
Internship subject to NDA, few informations available. Developed numerous models, losses and metrics with great results. During this incredibly rich experience I worked on **state of the art research** at the **crossroads of Computer Vision and NLP** on a subject close to **Vid2Text**:
- Optical-Flow
 - Encoder-Decoder
 - Attention methods
 - Pose estimation
 - Temporal Convolutional Networks
 - Transformers
- Sept. 2020 - Jun. 2021 **Research Project, MBDA, France**
Designing a surveillance system against drone attacks based on drone networks. This experience taught me to **think out of the box by finding new solutions** : I applied research on **wolves behavior** to the project.
- 5000+ lines of codes in Java, C++, Python
 - A*, RRT*, Genetic Algorithms

EDUCATION

- Sept. 2019 - Aug. 2022 **Ecole Polytechnique, Paris (France)**
Top 1 scientific university in France and one of the best in Europe. Specializing in Applied Mathematics and Computer Science.
- Sept. 2017 - Jul. 2019 **Lycée Pierre de Fermat, Toulouse (France)**
Top 10 French “classes préparatoires” two years of intense scientific classes (around 17 hours of work a day). Participated to the **International Chemistry Olympiad (IChO)** preparation for the French team.

INTERESTS & SKILLS

<i>Fields</i>	Mathematics	Computer Science	Cognitive science	Philosophy
<i>Examples of skills</i>	<ul style="list-style-type: none">• Stochastic calculus• Optimization• Algebra• Markov chains• Probability	<ul style="list-style-type: none">• Algorithmic• Data analysis• Machine Learning	<ul style="list-style-type: none">• Perception• Language processing• Brain imaging• Computational models	<ul style="list-style-type: none">• Freud• Hayek• Plato• Jankelevitch• Tocqueville
<i>Examples of interests</i>	Solving Optimization problems under Orthogonal constraints in C++		Comparing word embedding and computer vision models to MRI data during visual word recognition	
	Kaggle competitions Google Brain :Ventilator pressure prediction		BNP Paribas Data Challenge Generative Modelling for Financial Losses	