

# Yassine Machta

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## Education

- **ENSAE Paris** 2021–2025  
*Engineering Curriculum: Data Science, Statistics and Learning. GPA: 3.8*
- **Institut Polytechnique de Paris** 2024–2025  
*Master 2 Data Science*

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## Work Experience

- **Research Intern** Inria - [ARTICULAB](#), Paris  
*May 2025 – Nov 2025 Supervised by: [Cassell, J](#) and [Le Chapelier, M](#)*
  - Exploring believable real-time gesture generation for virtual embodied conversational agents
- **Research Intern** Sony R&D, Stuttgart  
*Jan 2024 – Jun 2024 Supervised by: [Facijs, Z](#) and [Franceschi, R](#) [Letter of Recommendation](#)*
  - Conducted experiments to evaluate the effect of uncontrolled environments on 3D reconstruction quality.
  - Developed an automated pipeline for image preprocessing and 3D reconstruction.
  - Created a web app to streamline mesh alignment and quality evaluation for engineering teams.
- **Research Intern** Inria - [SIMBIOTX](#), Saclay  
*May 2023 – Nov 2023 Supervised by: [Ali, O](#) and [Vignon-Clementel, I.](#)*
  - Implemented topology-preserving losses for accurate 3D vessel segmentation.
  - Performed statistical analysis of vessel tree morphometry and trained models on perfusion volumes.
  - Published to MICCAI 2024 (ADSMI workshop), presented at poster session. Look at the publications section for more details. [Code link](#)
- **Data Science Intern** Cour des Comptes, Paris  
*Jun 2022 – Sep 2022 Supervised by: [Grignon, P](#)*
  - Conducted a data analysis project in R to create an overview of the French Airport Network.
  - Utilized descriptive statistics and cartography for data visualization.

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## Skills

- **Programming Languages:** Python (PyTorch, Scikit-learn/image, Selenium, pandas, Numpy, matplotlib), Git, Slurm, Kubernetes, ArgoCD, Docker. Currently learning C++, Godot, and some JS/CSS.

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## Projects and Labs

- Reimplemented "Unsupervised Multi Modal Translation" as a project to get familiar with transformers and multi modality.
- Built Monte Carlo simulations for Lotka-Volterra models and conducted time series forecasting.
- NLP and LLMs: Finetuning LLMs using LoRA and DPO.
- RL : Experimenting with RL in Godot engine (training agents to master Skull King and simple environment navigation)
- Generative AI: [Conditional graph generation](#) and music sheet generation using diffusion and [Flow Matching](#)
- Finance: Used Mistral API to set up analysis of the [FOMC](#) meeting minutes and speech data in order to attempt predicting signals ([Link](#))
- GPU Programming: GPU-accelerated Monte Carlo simulation for the Variance Gamma model

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## Publications

- **Machta, Y.**, Ali, O., Facque, A., Vlascenau A., Hakkakian, K., Golse N., Vignon-Clementel, I. (2024). "Improving 3D Liver Vessel Segmentation through Topology Preservation." In *MICCAI ADSMI Workshop*, 2024. ([Arxiv](#), [Poster](#) and [code](#))
- *Hopefully more to come!*

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## Extracurricular Activities

- **ENSAE English Debating Team** 2022–2023  
*[FDA Tournament Winner](#)*
- **Sports and Student Councils** 2022–2023  
*Organized various events and activities at ENSAE Paris. Played on the volleyball team for 3 years.*

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## Languages

- **Arabic:** Native
- **French:** Native
- **English:** C1
- **Spanish:** A2

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