Yassine Machta

Personal Email · GitHub · LinkedIn · Personal Page

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

Work Experience

- **Research Intern** Inria - ARTICULAB, Paris
  May 2025 – Nov 2025 *Supervised by: Cassell, J and Le Chapelier, M*
  - Developed a real-time embedding/rule-based gesture retrieval baseline to enhance the believability of the Son of Sara Embodied Conversational Agent during user interactions.
  - Moving toward learned, context-sensitive gesture synthesis.

- **Research Intern** Sony R&D, Stuttgart
  Jan 2024 – Jun 2024 *Supervised by: Facius, 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. See 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.

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.

Projects & Labs

- **NLP and LLMs**: Finetuning LLMs using LoRA and DPO. Reimplemented "Unsupervised Multi Modal Translation" as a project to get familiar with transformers and multi modality.
- **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. Rewrote and optimized GPU kernels for a given pytorch neural network to further optimize inference time.

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)

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.

Languages

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

Last built on August 20, 2025.
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