Romain Menegaux

PhD in Machine Learning and Bioinformatics

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ABOUT ME	AI Researcher with expertise in Transformers and graph neural networks, specializing in applying machine learning to life sciences.

RESEARCH EXPERIENCE

Inria Centre at the University Grenoble Alpes, Paris, France

- Starting Research Position — Jan 2024 – Jan 2025
  Lead or collaborated on projects in variety of topics including:
  Flow Matching and Molecule Generation, Geoscience, and 3D scene representation.
- Post-doctoral Researcher — Nov 2021 – Nov 2023
  Lead two projects on Graph Neural Networks for molecule property prediction,
  and collaborated on a NeurIPS optimization paper.

Mines ParisTech & Institut Curie, Paris, France

- PhD student under the direction of Jean-Philippe Vert — Oct 2017 – Jun 2021
  Thematic: "String embeddings for large-scale machine learning in genomics"
  Adapted Natural Language Models for DNA sequence classification

Amazon, New York

- Research internship in the Supply Chain Optimization team — May 2019 – Sep 2019
  Applied Model-based Deep Reinforcement Learning for large-scale Inventory Management

Bloomberg L.P., New York, NY

- Quantitative Researcher / Developer — Jun 2014 – Sep 2017

EDUCATION

Columbia University, New York, NY

- Master's in Financial Engineering — Jul 2013 – May 2014

Ecole Polytechnique, Palaiseau, FRANCE

- Master's in Probability and Statistics — Sep 2010 – Aug 2014

SELECTED PUBLICATIONS

[1] **Menegaux, R.** et al. "Self-Attention in Colors: Encoding Graph Structure in Transformers"
Transactions on Machine Learning Research, Apr 2023
State-of-the-art on the ZINC Graph molecule prediction dataset.

[2] Arbel, M., **Menegaux, R.** & Wolinski, P. "Rethinking Gauss-Newton for learning over-parameterized models"
Advances in Neural Information Processing Systems (NeurIPS), Dec 2023

[3] Marrie, J., **Menegaux, R.** et al. "LUDVIG: Learning-free Uplifting of 2D Visual features to Gaussian Splatting scenes"
arXiv Preprint, Sep 2024

[4] **Menegaux, R.** & Vert, J. "Continuous Embedding of DNA reads, and application to metagenomics"
Journal of Computational Biology, May 2018
Best paper award at the 2018 ICML Computational Biology Workshop

SOFTWARE DEVELOPMENT

QuantStack, Paris, FRANCE — Oct 2017 – Oct 2021

- Part-time developer for open-source projects in the Jupyter ecosystem,
  core contributor to the bqplot plotting library and the interactive ipywidgets.

SKILLS

Python, PyTorch, Transformers, Javascript, C++.