Armand **Kassaï Koupaï**

PhD student at Sorbonne Université, ISIR, MLIA team

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French PhD student working on deep learning for parametric PDEs and multi-physics at Sorbonne Université. My primary focus is out-of-distribution generalization, generative modeling, foundation models for Science.

Education

PhD in Computer Science – Sorbonne Université (ISIR)
Advisor: Patrick Gallinari
• PhD thesis – Physics-based Deep Learning for parametric PDEs and multi-physics: in and out-of-distribution generalization

MSc in Data Science [w/ distinction]– University of Bristol
• Machine Learning, Deep learning, NLP, statistics, probability

Diplôme d'ingénieur (MSc) – ENSEA
• Signal Processing, Computer Science, Applied mathematics

Selected Publications

Zebra: In-Context and Generative Pretraining for Solving Parametric PDEs **2024**
Louis Serrano, Armand Kassaï Koupaï, Thomas X Wang, Pierre Erbacher, Patrick Gallinari *Preprint*

GEPS: Boosting Generalization in Parametric PDE Neural Solvers through Adaptive Conditioning **2024**
Armand Kassaï Koupaï, Jorge Misfut Benet, Yuan Yin, Jean-Noël Vittaut, Patrick Gallinari *NeurIPS 2024*

Learn to adapt parametric solvers under incomplete physics **2024**
Armand Kassaï Koupaï, Yuan Yin, Patrick Gallinari *ICLR Workshop 2024*

Operator learning with neural fields: Tackling pdes on general geometries **2023**
Louis Serrano, Lise Le Boudec, Armand Kassaï Koupaï, Thomas X Wang, Yuan Yin, *NeurIPS 2023*
Jean-Noël Vittaut, Patrick Gallinari

Self-supervised multimodal fusion transformer for passive activity recognition **2022**
Armand Kassaï Koupaï, Mohammud J Bocus, Raul Santos-Rodriguez, Robert J Piechocki, Ryan McConville *IET WSS*

Experience

University of Bristol
AI Scientist and Researcher in Radar Fusion
- Working for the OPERA project under the supervision of Robert Piechocki, in collaboration with UCL and the University of Oxford.
• *Research on self-supervised learning, multi-modality fusion, transformers*

SustainEcho
Data engineer intern
- The first platform that uses AI to automate the Carbon Footprint of construction projects directly from measurements.
• *Tools: ElasticSearch, Python (NLP), Neo4j*

Renault Group
Signal processing intern
- French multinational automobile manufacturer established in 1899. Assisted the R&D team specialized in Sound
• *Tools: Matlab*

Teaching

Sorbonne Université • *Bachelor level* • *Teacher assistant*
- Introduction to Data Science (40h)
École Lerebours • *Master level* • *Lecturer*
- Machine Learning (40h)
École Lerebours • *Bachelor level* • *Lecturer*
- Introduction to Artificial Intelligence (40h)

Skills

Programming languages: *Python, Java, C, Shell*
Packages: *Pytorch, Scikit-Learn, Jax, Numpy, Pandas*
Tools: *Linux, Latex, Git, JupyterLab, Weights and Biases*
Languages: *French, English, Persian*