

# YUAN YIN

[in yuan-yin-nn](#) [yuan-yin.github.io](#)  French, English, Mandarin  Montrouge, Île-de-France, France



## PROFESSIONAL PROFIL

Passionate about cutting-edge technologies in AI, notably in **Machine Learning** (ML) and **Deep Learning** (DL), I specialize in pioneering **Neural Network** (NN) methods for analyzing physical **dynamics**, notably impacting fields like weather forecasting.

This proficiency enables me to develop DL/AI solutions for complex real-world challenges by innovating upon existing methods, and integrating DL approaches into existing non-ML systems. Additionally, it provides me with opportunities to work on other topics, such as **Computer Vision** (CV).

## EXPERIENCE

**Postdoctoral AI Researcher** Apr 2024 » Present  
*Valeo.ai Paris, France*

- Optimizing adversarial trajectories for autonomous vehicles

**Postdoctoral Researcher** Jul 2023 » Dec 2023  
*Sorbonne Université, ISIR, MLIA Team Paris, France*

- Supervising ongoing research projects
- Writing an introduction to Physics-Aware Deep Learning

**PhD Student, Teaching Assistant** Oct 2019 » Jun 2023  
*Sorbonne Université, ISIR, MLIA Team Paris, France*

- Supervised by Patrick GALLINARI & Nicolas BASKIOTIS
- Focus: Physics-Aware Deep Learning and dynamical systems
  - a) DL-physics hybrid modeling
  - b) Out-of-distribution generalization for dynamics modeling
  - c) Continuous dynamics modeling with neural fields (NeRF)

**Research Intern in Deep Learning** Feb 2019 » Sep 2019  
*Sorbonne Université, ISIR, MLIA Team Paris, France*

- Imputing spatiotemporal data with generative models

**Research Intern in NLP** *Inria Paris* Feb 2018 » Jul 2018

**Research Intern in CV** *Beihang Univ.* May 2015 » Jul 2016

## EDUCATION

**Sorbonne Université** *fka. UPMC (Paris-6) Paris, France*

PhD in Machine Learning and Deep Learning Jun 2023

MSc Yr 2, Master Data Science Paris (DAC) 2019

Succeeded with Highest Honor (Très Bien), ranked 1st

**Université Paris Cité** *fka. U. Paris-Diderot (Paris-7) Paris, France*

MSc Yr 1, Parisian Research Master in Comp. Sci. (MPRI) 2018

Succeeded with Highest Honor (Très Bien)

Univ. Dipl. in French Language and Civilization 2017

Succeeded with High Honors (Bien)

**Beihang University** *In China's Top 20 Universities Beijing, China*

BSc, Applied Computer Science 2016

## TECHNICAL SKILLS

**OS&Hardware Platform** Linux servers equipped with NVIDIA GPUs

**Programming Languages** Python (PyTorch, NumPy, etc.), C/C++, Java,  $\text{\LaTeX}$ , Matlab, OCaml, Prolog, iOS Development, SQL

**Tools** Git, Emacs, VS Code, Eclipse

## PROFESSIONAL PROFICIENCY

**Scientific Monitoring** Demonstrated through a diverse range of research topics inspired by a large base of literature.

**Research Communication** First-authored publications in top-tier international ML conferences (NeurIPS, ICLR, ICML). Presentations and invited talks both in the academy and the industry.

**Extensive Collaboration** All of my research projects result from internal and external collaboration.

**Community Contribution** Served as reviewer in top-tier international ML conferences and workshops.

## LANGUAGES

French (CEFR C1, DALF type exams, 2017) ●●●●●

English (CEFR B2, IELTS, 2015) ●●●●●

Mandarin (native) ●●●●●

## DISTINCTIONS

**Accessit of the 2024 Thesis Prize** from the [French Association for Artificial Intelligence \(AFIA\)](#)

**Top Reviewer** at NeurIPS 2023

## COMMUNITY SERVICE

**Conference Reviewer** at NeurIPS 2021-23, ICLR 2023-24, ICML 2022-24, ECML-PKDD 2021, and ACM Multimedia 2021

**Workshop Reviewer** at ML4PS at ICML 2022-23 and NeurIPS 2023, Physics4ML at ICLR 2023, SynS & ML at ICML 2023

**Teaching** 192 teaching hours in French during 3 yrs (Oct 2019—Sep 2022) at Sorbonne Université in Engineering Department (UFR 919)

For undergraduates: C Programming (L1), Algorithmics (L2), Probabilities (L3). For postgraduates: Research Methodology in Machine Learning (M2)

## PUBLICATIONS

**Conference Papers** *\*Equal contribution*

- Y. Yin\***, M. Kirchmeyer\*, J.-Y. Franceschi\*, A. Rakotomamonjy, and P. Gallinari. Continuous PDE dynamics forecasting with implicit neural representations. In ICLR 2023. (Spotlight)
- L. Serrano, L. Le Boudec, A. Kassai Koupaï, **Y. Yin**, T. X. Wang, J.-N. Vittaut, and P. Gallinari. Operator learning with neural fields: Tackling PDEs on general geometries. In NeurIPS 2023. (Poster)

- M. Kirchmeyer\*, **Y. Yin**\*, J. Donà, N. Baskiotis, A. Rakotomamonjy, and P. Gallinari. Generalizing to new physical systems via context-informed dynamics model. In *ICML 2022*. **(Spotlight)**
- **Y. Yin**, I. Ayed, E. de Bézenac, N. Baskiotis, and P. Gallinari. LEADS: Learning dynamical systems that generalize across environments. In *NeurIPS 2021*. **(Poster)**
- **Y. Yin**\*, V. Le Guen\*, J. Donà\*, E. de Bézenac\*, I. Ayed\*, N. Thome, and P. Gallinari. Augmenting physical models with deep networks for complex dynamics forecasting. In *ICLR 2021*. **(Oral, also in J Stat Mech: Theory Exp)**

## Journal Papers

- E. Le Naour, L. Serrano, L. Migus, **Y. Yin**, G. Agoua, N. Baskiotis, P. Gallinari, and V. Guigue. Time series continuous modeling for imputation and forecasting with implicit neural representations. *TMLR*, 2024.
- C. Metta, A. Beretta, R. Guidotti, **Y. Yin**, P. Gallinari, S. Rinzivillo, and F. Giannotti. Improving trust and confidence in medical skin lesion diagnosis through explainable deep learning. *Int. J. Data. Sci. Anal.*, 2023.
- D. Huang, R.K. Zhang, **Y. Yin**, Y.D. Wang, and Y.H. Wang. Local feature approach to dorsal hand vein recognition by centroid-based circular key-point grid and fine-grained matching. *Image Vis. Comput.*, 2017.

## Workshop Papers

- L. Le Boudec, E. de Bézenac, L. Serrano, **Y. Yin**, and P. Gallinari. Learning iterative algorithms to solve PDEs. In *ICLR 2024 Workshop on AI4DiffEqnsInSci*.
- A. Kassai Koupai, **Y. Yin**, and P. Gallinari. Learn to adapt parametric solvers under incomplete physics. In *ICLR 2024 Workshop on AI4DiffEqnsInSci*.
- L. Serrano, L. Migus, **Y. Yin**, J. A. Mazari, J.-N. Vittaut, and P. Gallinari. INFINITY: Neural field modeling for reynolds-averaged navier-stokes equations. In *ICML 2023 Workshop on SynS & ML*.
- L. Migus, **Y. Yin**, J. A. Mazari, and P. Gallinari. Multi-scale physical representations for approximating PDE solutions with

graph neural operators. In *ICLR 2022 Workshop on GTRL*.

- **Y. Yin**, A. Pajot, E. De Bézenac, and P. Gallinari. Unsupervised inpainting for occluded sea surface temperature sequences. In *CI 2019*.

**Preprints** *not peer-reviewed*

- **Y. Yin**, A. Pajot, E. de Bézenac, and P. Gallinari. Unsupervised spatiotemporal data inpainting, 2020.

## PRESENTATIONS AND INVITED TALKS

Please find the details of the talks on [my website](#)

Workshop on <i>Mathematical Foundations of AI</i> at DATAIA-SCAI	Jan 2024
Seminar at <a href="#">Valeo.ai</a>	Jan 2024
Seminar <a href="#">UMR MIA Paris-Saclay</a> at <a href="#">AgroParisTech</a>	Nov 2023
Seminar <a href="#">LAGA-MCS</a> at <a href="#">Univ. Sorbonne Paris Nord</a>	Nov 2023
Tutorial at <a href="#">ECML-PKDD 2023</a>	Sep 2023
PhD Defense	Jun 2023
Seminar of <a href="#">Signal Processing Lab (LTS4)</a> at <a href="#">EPFL</a>	May 2023
Spotlight Conference Presentation at <a href="#">ICLR 2023</a>	May 2023
<a href="#">AI4Science Talks</a> at <a href="#">Machine Learning for Simulation Lab</a> at <a href="#">University of Stuttgart &amp; NEC Labs Europe</a>	Apr 2023
<a href="#">SIG LearnFluidS</a> at <a href="#">d'Alembert, Sorbonne Université</a>	Mar 2023
Medical Biology Engineers Day of <a href="#">AP-HP</a>	Mar 2023
Seminar at <a href="#">Criteo AI Lab</a>	Nov 2022
Seminar <a href="#">Sorbonne-ISAE-CERFACS</a>	Oct 2022
Spotlight Conference Presentation at <a href="#">ICML 2022</a>	Jul 2022
Seminar at <a href="#">Extrality</a> (Now <a href="#">Ansys SimAI</a> )	Feb 2022
Conference Presentation at <a href="#">NeurIPS 2021@Paris</a>	Dec 2021
<a href="#">AAAI 2021 Spring Symposium MLPS</a>	Mar 2021