Julien **Khlaut**

Paris, France

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Senior ML researcher building foundation models at Raidium (3D medical imaging). PhD (Université Paris Cité), MSc MVA (ENS Paris-Saclay), École des Ponts engineer. Pretrains state-of-the-art models on up to **256 H100 GPUs**. First author of **Jolia** (**winner of the CVPR 2026 3D-CT challenge**, submitted to CVPR 2027) and **RadSAM**; co-first author of the open-weight **Curia** model. Owns much of the team's codebase: core library, code review and internal tooling.

Experience

Raidium **Paris**

Senior Machine Learning Researcher *Jun 2026 – Present*

- **Foundation models**: defined the research roadmap of the foundation-model sub-squad (3 researchers) and own pretraining of the company's foundation models (Curia, Curia-2, Jolia).
- **Large-scale training**: pretrain state-of-the-art vision and vision–language models on up to **256 H100 GPUs** (multi-node PyTorch distributed training on HPC clusters, Slurm).
- **Engineering ownership**: top contributor to Raidium's internal ML library; review most of the team's pull requests; built most internal tooling, including the **experiment tracker** used by the whole R&D team (20+ people).

Raidium **Paris**

Machine Learning Researcher – CIFRE PhD *Nov 2023 – Jun 2026*

- **Jolia** (first author): **1st place, CVPR 2026 3D-CT Foundation Model Challenge**; accepted at 3 workshops; submitted to CVPR 2027. 3D CT vision–language foundation model with concept-level contrastive alignment between scans and radiological findings; open weights on Hugging Face.
- **Curia & Curia-2** (co-first author of Curia): self-supervised (DINOv2) radiology foundation models for CT & MRI, pretrained on 200M images (130 TB) and scaled to billion-parameter ViTs; open weights (Curia, Curia-2).
- **RadSAM** (first author): 3D segmentation of radiological volumes from a 2D promptable model.
- Contributed to **ONCOPILOT** (tumour evaluation, *npj Precision Oncology*) and the **RadImageNet-VQA** benchmark.

Raidium **Paris**

Machine Learning Research Intern *Apr 2023 – Sep 2023*

- Fine-tuned LLMs (BioMedLM) for knowledge-intensive medical question answering and built a GPT-4-generated instruction dataset. Published at the NAACL 2024 Clinical NLP Workshop (first author).

2022: **Data Scientist**, Warner Bros. Discovery: ML decision-support software with SHAP explainability

2021: **Full-Stack Developer**, BAM: 3 client web/mobile projects (React, TypeScript)

2020 – 2021: **Mathematics oral examiner** (CPGE), Collège Stanislas • **Head of IT**, Ponts Junior Enterprise

Education

Université Paris Cité **France**

PhD in Machine Learning (CIFRE industrial PhD with Raidium) *2023 – 2026*

Thesis: *Multimodal Foundation Models for Radiology*. Advisors: Prof. Marc Sapoval, Dr. Tom Boeken.

ENS Paris-Saclay **France**

MSc MVA – Mathematics, Vision, Learning *2022 – 2023*

Machine learning, Bayesian inference, convex optimisation, reinforcement learning.

École des Ponts ParisTech **France**

Engineering Degree (MSc) – Applied Mathematics & Computer Science *2019 – 2023*

Machine learning, deep learning, operations research, high-dimensional statistics.

Collège Stanislas **Paris**

Classes Préparatoires (PCSI / PC)* *2017 – 2019*

Skills

ML / DL: PyTorch, self-supervised learning (DINOv2), vision–language models, LLM fine-tuning, Hugging Face, XGBoost

HPC: Multi-node distributed training (up to 256 H100s), Slurm, Linux, Docker, experiment tracking

Engineering: Python, C++, SQL, Julia, R, TypeScript, Git; code review and internal library design

Maths: Probability & statistics, convex optimisation, operations research (Gurobi)

Languages: French (native), English (fluent, C1), Spanish (A2), Japanese (A1)

Publications

- A. Charley, **J. Khlaut** et al. *Can Agentic Systems Close the Gap in Radiology with Production AI Tools?* arXiv:2611.09836, 2026
- **J. Khlaut** et al. *Jolia: Concept-Level Vision-Language Alignment for 3D CT Contrastive Learning*. Winner of the CVPR 2026 3D-CT FM Challenge; accepted at 3 workshops; submitted to CVPR 2027, arXiv:2606.24570 [weights]
- K. Le Floch, E. Ferreres, **J. Khlaut** et al. *A Promptable 3D-CT Foundation Model-Based Approach for Pulmonary Embolism*. *CardioVascular and Interventional Radiology*, 2026
- A. Munk et al. (incl. **J. Khlaut**) *Towards Brain MRI Foundation Models for the Clinic: Findings from the FOMO25 Challenge*. arXiv:2604.11679, 2026
- A. Saporta, B. Callard, C. Dancette, **J. Khlaut** et al. *Curia-2: Scaling Self-Supervised Learning for Radiology Foundation Models*. arXiv:2604.01987, 2026 [weights]
- L. Butsanets, C. Corbière, **J. Khlaut** et al. *RadImageNet-VQA: A Large-Scale CT & MRI Dataset for Radiologic Visual Question Answering*. arXiv:2512.17396, 2025
- C. Dancette*, **J. Khlaut*** et al. *Curia: A Multi-Modal Foundation Model for Radiology*. *Equal contribution. Submitted to a medical journal, arXiv:2509.06830 [weights]
- **J. Khlaut** et al. *RadSAM: Segmenting 3D Radiological Images with a 2D Promptable Model*. arXiv:2504.20837, 2025
- L. Machado et al. (incl. **J. Khlaut**) *A Promptable CT Foundation Model for Solid Tumor Evaluation*. *npj Precision Oncology*, 2025
- A. Lesaunier, **J. Khlaut** et al. *Artificial Intelligence in Interventional Radiology: Current Concepts and Future Trends*. *Diagnostic and Interventional Imaging*, 2025
- **J. Khlaut** et al. *Efficient Medical Question Answering with Knowledge-Augmented Question Generation*. NAACL Clinical NLP Workshop, 2024
- P. Hérent et al. (incl. **J. Khlaut**) *Promptable Foundation Model for Automatic Whole-Body RECIST Measurement*. *Journal of Clinical Oncology* (abstract), 2024

Interests

Go, running, reading, sewing, board games, 3D art (Blender).