JOEY DAVID

Graduate Student Researcher

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Profile

Promising AI graduate student specializing in foundational research on self-improving cognitive architectures. Currently pursuing a selective MSc jointly hosted by ENS Ulm, Dauphine PSL, and Mines Paris. Passionate about gödel machines, alignment, and scalable learning systems.

Education

M. Sc. in Artificial Intelligence, Systems and Data - *Expected* **Sep. 2024 – June 2026**
Dauphine PSL - ENS Ulm - Mines Paris *Paris, France*

CPGE / B.Sc. in Computer Science - *With Honors* **Sep. 2020 – April 2024**
Univ. Claude Bernard / Oregon State Univ. - 3.96 GPA, mobility grant *Lyon, France / Corvallis, Oregon*

American OIB Scientific Baccalaureate - *With Honors* **Sep. 2017 – June 2020**
Cité Scolaire Internationale de Lyon *Lyon, France*

Professional Experience

Student Researcher | *DISP Laboratory, INSA Lyon* **March 2025 - June 2025**
- Development of a **semi-supervised learning pipeline** for localization of symptoms on fundus images for etiological diagnosis of uveitis, a sight-threatening eye inflammation.
- Contribution to European **HarmonicAI** project, establishing an international consortium for medical image analysis.

Fullstack Developer Internship | *Sopra Steria* **April 2024 - July 2024**
- Complete design and implementation of a **CV analysis model** based on **natural language processing**.
- Development in Java, Spring, and React of various features, 100% of which were implemented in the *Operation* application, used by *Storengy* to manage France's gas network.

Information Systems Technician | *Hôpitaux Nord Ouest* **June 2023 - August 2023**
- Actively maintained and improved IT systems for 10+ hospitals and care centers, resolving over **600 ticketed issues**.

Research

Towards a Data-Efficient, Semi-Supervised Pipeline for Localization of Uveitis Symptoms in Fundus Images.
By **J. David**, T. Wang, R. Jacquot. Preprint under review, 2025.

Relevant Projects

Self-Improving LLMs | *Recursive Self-Improvement, Neurosymbolic AI* **June 2025 – Ongoing**
- Research on recursively self-improving architectures for large language models while maintaining alignment. Focus areas include **Gödel machines**, **automated refinement loops** and **neurosymbolic enhancements for structured cognition**.

Agentica | *LLMs, Agentic architecture* **January 2025 – April 2025**
- Conception and implementation of modular LLM-powered **agentic framework** for automation, learning, and research. Current agents include a research agent, an email assistant for categorization and others.

GPT-2, from scratch | *Python, Pytorch* **July 2024 – August 2024**
- Implementation of the **multi-head attention** mechanism to create a text prediction model, trained on the complete works of Charles Dickens.

Skills

Core AI/ML: Machine Learning, Deep Learning, NLP, Computer Vision, Neural Networks, Agentic AI, RAG, Mathematical Foundations, Optimization.
Engineering: Python, PyTorch, CUDA, HuggingFace, C++, SQL, Docker, Git, CI/CD, System Design, Data Systems.
Communication: English (native), French (native), Technical Articulation, Interpersonnal Intelligence.
Problem-Solving: Analytical Reasoning, Ambiguity Navigation, Resilience.

Interests

Hobbies: Long-distance Hiking, Skiing, Calisthenics, Philosophy, Languages, Chess.
Volunteering :
- Contributed to the deployment of an HIV screening campaign for vulnerable populations in Beaujolais (France). (2021)
- Led an initiative to provide food and water to the homeless of Corvallis (Oregon) during winter. (2023)