

# Julian Coda-Forno

Menlo Park – USA

☎ (614) 342-1309 • ✉ [julian.coda-forno@helmholtz-munich.de](mailto:julian.coda-forno@helmholtz-munich.de)

🌐 [juliancodaforno.github.io](https://juliancodaforno.github.io) • 🌐 [juliancodaforno](https://juliancodaforno.com)

**Languages:** French (native) | Spanish (native) | English (fluent)

## Research Interests

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Large Language Models; Meta-Learning; Cognitive Science; Deep Learning; In-context Learning; Reinforcement-Learning; LLM Reasoning; Decision-making; Mechanistic Interpretability

## Education

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### ELLIS & Technical University of Munich (TUM)

Munich & London

*PhD in Machine learning*

2022–Present

Supervisors: Dr. Eric Schulz (Helmholtz Munich) & Dr. Jane X. Wang (Google DeepMind)

Topic: LLMs' representations, behaviour and decision-making from a cognitive science perspective

### University College London (UCL)

London, UK

*MS.c in Data Science & Machine Learning, Distinction (82.6%) with Dean's List*

2020–2021

Supervisors: Prof. Neil Burgess (UCL) & Dr. Zafeirios Fountas (Huawei)

Title: "Leveraging episodic memory in model-based RL"

### University of Manchester

Manchester, UK

*BEng Aerospace Engineering, First class Honours*

2015–2019

## Experience

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### Meta Platforms, Inc

Menlo Park, USA

*Research Scientist Intern*

2025–Present

Working on reasoning in LLMs

### Huawei

London, UK

*Visiting Research intern (10 months)*

2021–2022

Collaborated with Huawei Neuromorphic Computing Group for my UCL Master's research thesis and pursued the research further. Investigated how the neuroscience concept of episodic memory could be used in model-based reinforcement learning for more sample efficiency in complex tasks and environments.

Accepted paper at MemARI (2022 NeurIPS workshop)

### Rolls-Royce Plc

Birmingham, UK

*Software Engineering Intern (12 months)*

2018–2019

## Supervision

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**Natalia Scharfenberg:** Osnabrück University, Master Thesis: "LLM's representations for RL" 2023

## Awards

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**Dean's List:** top 5% of student achievement within the faculty of Engineering

2021

**Distinctions of the jury:** 14th French Olympiads of mathematics - Nice Academy 2014

## Summer schools

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**MIT Brains, Minds & Machines Summer Course:** Woods Hole, USA 2023

## Invited talks

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**Harvard Efficient-ML seminar series**

"Rising star speaker" - *Tutorial on meta-learning in deep neural networks* 2024

## Reviewing

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**Conference on Neural Information Processing Systems (NeurIPS)** 2024

**Conference on Neural Information Processing Systems (NeurIPS)** 2023

## Research papers

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[1] Marcel Binz, ..., **Julian Coda-Forno**, ..., and Eric Schulz. Centaur: a foundation model of human cognition. *Nature*, 2025.

[2] **Julian Coda-Forno**, Marcel Binz, Jane X. Wang, and Eric Schulz. Cogbench: a large language model walks into a psychology lab. *International Conference on Machine Learning (ICML)*, 2024.

[3] Akshay K. Jagadish, **Julian Coda-Forno**, Mirko Thalmann, Eric Schulz, and Marcel Binz. Ecologically rational meta-learned inference explains human category learning. *International Conference on Machine Learning (ICML)*, 2024.

[4] **Julian Coda-Forno**, Kristin Witte, Akshay K Jagadish, Marcel Binz, Zeynep Akata, and Eric Schulz. Inducing anxiety in large language models increases exploration and bias. *arXiv:2304.11111*, 2023.

[5] Elif Akata, Lion Schulz, **Julian Coda-Forno**, Seong Joon Oh, Matthias Bethge, and Eric Schulz. Playing repeated games with large language models. *Nature Human Behaviour*, 2023.

[6] **Julian Coda-Forno**, Marcel Binz, Zeynep Akata, Matt Botvinick, Jane Wang, and Eric Schulz. Meta-in-context learning in large language models. *Advances in Neural Information Processing Systems*, 36, 2023.

[7] **Julian Coda-Forno**, Changmin Yu, Qinghai Guo, Zafeirios Fountas, and Neil Burgess. Leveraging episodic memory to improve world models for reinforcement learning. *Memory in Artificial and Real Intelligence (MemARI) workshop at NeurIPS*, 2022.