FADY REZK

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I recently submitted my PhD in Artificial Intelligence at the University of Edinburgh, supervised by Prof. Timothy Hospedales and Dr. Henry Gouk. Across 8+ years of industry and academic research, I have worked on efficient AI, trustworthy AI and AI alignment, publishing at EMNLP, AAAI, NeurIPS and ICML, completing two research internships at Samsung AI Research, Cambridge, and holding an A*STAR PhD Research Fellowship. I currently work on neuro-symbolic hierarchical planning for world models in embodied robotics. I believe progress in AI is bottlenecked not by scale but by how we measure intelligence: rigorous benchmarking and evaluation are first-class research problems. My focus is on reliable agentic systems and long-horizon planning with world models, grounding the next generation of foundation models in trustworthy, measurable capabilities.

Research Experience

Samsung AI Research, Cambridge Jun 2026 – Feb 2027
Research Scientist Intern

- Researching neuro-symbolic hierarchical planning with latent world models for long-horizon embodied robotics tasks.
- Co-authored *Metro-WM*, a long-horizon latent planning method that constrains high-level planning to realisable sub-goals (under review at ICLR 2027).

A*STAR, Singapore 2024 – 2025
PhD Student Fellow

- Led research on personalized alignment for LLMs, showing that standard reward-model evaluation fails to predict downstream behaviour; published at EMNLP 2026.
- Proposed *policy accuracy*, a new evaluation metric for whether reward-guided LLMs correctly follow individual user preferences.

Samsung AI Research, Cambridge Aug 2024 – Feb 2025
Machine Learning Research Engineer (Research Scientist Intern)

- Developed STEEL, the first framework to give certifiable performance guarantees for foundation models in few-shot transfer learning; published at ICML 2026.
- Scaled generative models over adapter parameter spaces to 1B parameters across vision and language tasks.

Education

University of Edinburgh Oct 2022 – Oct 2026
PhD in Artificial Intelligence (thesis submitted October 2026) *Edinburgh, UK*

A*STAR, Singapore Feb 2025 – Feb 2026
PhD Research Fellowship

University of Edinburgh Sep 2020 – Aug 2021
MSc in Artificial Intelligence, Distinction *Edinburgh, UK*

University of Sheffield Sep 2015 – Jun 2019
BEng Computer Systems Engineering with a Year in Industry, First Class Honours *Sheffield, UK*

Selected Publications

- Royson Lee, **Fady Rezk**, Titouan Parcollet, Timothy Hospedales, Cristina Cornelio
  "Metro-WM: Long-Horizon Latent Planning with Realisable Sub-Goals"
  Under review at ICLR 2027.
- **Fady Rezk**, Yuangang Pan, Chuan-Sheng Foo, Xun Xu, Nancy Chen, Henry Gouk, Timothy Hospedales
  "The Reward Model Selection Crisis in Personalized Alignment"
  EMNLP 2026.
- **Fady Rezk**, Royson Lee, Henry Gouk, Timothy Hospedales, Minyoung Kim
  "Weight Space Learning for Certifiable Few-shot Transfer Learning"
  ICML 2026. ICLR 2025 Weight Space Learning Workshop (Spotlight & Oral).
- Royson Lee, Minyoung Kim, **Fady Rezk**, Rui Li, Stylianos I. Venieris, Timothy Hospedales
  "FedP2EFT: Federated Learning to Personalize PEFT for Multilingual LLMs"
  AAAI 2026 (Poster).
- Antreas Antoniou, Eleni Triantafillou, Hugo Larochelle, **Fady Rezk**, et al.
  "EEVEE and GATE: Finding the Right Benchmarks and How to Run Them Seamlessly"
- **Fady Rezk**, Antreas Antoniou, Henry Gouk, Timothy Hospedales
  "Liouna: Biologically Plausible Learning for Efficient Pre-Training of Transferrable Deep Models"
  ICML 2024 WANT Workshop.
- **Fady Rezk**, Antreas Antoniou, Henry Gouk, Timothy Hospedales
  "Is Scaling Learned Optimizers Worth It? Evaluating the Value of VeLO's 4000 TPU Months"
  NeurIPS 2023 ICBINB Workshop.

Industry Experience

FastAutomate Jun 2021 – May 2023
Co-Founder and Chief AI Officer

- Co-founded an AI-powered GUI automation agent startup, leading technical strategy, product development and business operations.
- Delivered client engagements including HR automation pipelines.
- Built the team from the ground up, recruiting, training and managing engineers while balancing hands-on technical work with client delivery.

TMentors Jun 2021 – May 2023
ML Department Manager

- Delivered a full-stack data science project for L'Azurdé, the largest jewellery e-commerce platform in the MENA region.
- Built end-to-end BI solutions for enterprise clients, including ETL pipelines, PowerBI integrations and real-time dashboards.
- Led team and project management, solution architecture, hiring, client relations, tender writing, DevOps and deployment.

Sharp Life Science Sep 2017 – Sep 2018
Student Researcher, Software Engineering / Acting QA Manager *Oxford Science Park, UK*

- Designed a surrogate lumped-parameter model for electrowetting dynamics, significantly speeding up prototyping.
- Applied graph theory to validate, schedule and design laboratory workflows; built an extensible, temporally queryable DAG data structure.
- Designed and deployed a production domain-specific dataflow programming language in 10 weeks, still in active use.
- Introduced an integration testing framework across all software products; acted as QA Manager for the 2nd-generation platform release.

Other Research Projects

- **On Training Implicit Meta-Learning with Applications to Inductive Weighing in Consistency Regularization** 2021
  With Ondrej Bohdal and Timothy Hospedales. Compared second-order gradient approximations in implicit meta-learning; designed an inductive semi-supervised method outperforming FixMatch.
- **BEng Thesis: Biomedical Systems Modelling and Decision Support** 2018 – 2019
  Neuro-symbolic fuzzy-logic modelling to predict severely depressed LVEF on ICU admission (MIMIC-III).
- **Sheffield Undergraduate Research Experience: Intuitive Interfaces for Human-Robot Interaction** 2017
  Designed and led a human-robot interaction experiment with engineers and psychologists; integrated Kaldi-ASR speech recognition.

Technical Skills

Languages	Python (advanced), C# / .NET (advanced)
Deep Learning	PyTorch, JAX, HuggingFace Transformers, Accelerate, PEFT, diffusion models
Data	NumPy, SciPy, pandas, scikit-learn, Apache Spark, Git
Infrastructure	GCP Deep Learning VMs, BigQuery, Azure Data Factory, Azure Synapse, Kubernetes, Docker

Awards and Grants

A*STAR PhD Research Fellowship	2025 – 26
Google TPU Research Cloud (TRC) Compute Grant	2022
Faculty Undergraduate Scholarships for Academic Achievement (Years 1, 2 and 4), University of Sheffield	2015 – 19
"One World" Award for Internationalisation	2016 – 17