

SAMUEL OLIVEIRA

SAMUELCCOLIVEIRA@GMAIL.COM | [PERSONAL WEBSITE](#) | [GITHUB](#)

EDUCATION

University College London

Sept 2023 – Sept 2024

MSc Machine Learning

- Current Classification: 79% (First Class Honours).
- Courses include: Reinforcement Learning (87%), Probabilistic & Unsupervised Learning (81%) (Gatsby Unit PhD Module), Multi-Agent AI (86%), Bayesian Deep Learning (89%).
- MSc Thesis: "Inverse RL using Generative Planning Models in Trajectory Space" (Ilija Bogunovic's Group).

Imperial College London

Sept 2019 – June 2023

MEng Biomedical Engineering (Computational Bioengineering Specialization)

- Dean's List (top 10% of cohort) in 3rd and 4th years. Final Classification: 78.45 % (First Class Honours).
- Relevant courses: Artificial Intelligence, Optimization, Mathematical Modelling, Computational Neuroscience.
- Undergraduate Thesis: "EczemaPF: An online learning approach to real-time eczema severity prediction".

RESEARCH AND WORK EXPERIENCE

MSc Thesis Student and Research Assistant

May 2024 – Present

Bogunovic Group, University College London

London, UK

- Developing a novel Inverse Reinforcement Learning (IRL) framework using diffusion models.
- Benchmarking the framework against state of the art IRL methods in multiple Gymnasium environments.
- Working towards an ICML 2025 submission.

Undergraduate Thesis Student and Research Assistant

Oct 2022 – Sept 2023

Tanaka Group, Imperial College London

London, UK

- Led the implementation of a Sequential Monte-Carlo framework to predict eczema severity in under 1 second.
- Organised and taught tutorials on several ML topics, including Sequential Monte-Carlo, to the research group.
- Current Manuscript: "EczemaPF: an efficient algorithm for predicting the evolution of eczema severity".

Software Engineering Intern

June 2022 – Aug 2022

Goldman Sachs

Birmingham, UK

- Implemented a penetration testing framework (Python, AWS, Terraform) for a web app hosted on AWS.
- Led the integration of the penetration testing framework into QA testing.
- Contributed 10K+ lines of code to an established codebase via Git.
- Presented my work virtually to 150+ colleagues across the firm.

PROJECTS

Multi-Task Multi-Agent RL using Shared Distilled Policies | *Python, PyTorch*

- Proposed and implemented an extension of DeepMind's Distral framework to a multi-agent setting.
- Created a grid environment designed to assess collaboration between agents after knowledge transfer.

Impact of the pre-training data distribution on the performance of MAEs | *Python, PyTorch, SQL, Linux*

- Pre-trained and finetuned Masked Autoencoders for different pre-training data distributions.
- Built a pipeline to pre-train and finetune the models on the UCL HPC system (Linux-based).

Language Model and Autoencoder-based Clinical Decision Support System | *Python, PyTorch, Git*

- Developed a multi-modal pipeline aiming to output diagnostic reports for chest X-rays.
- Analysed an autoencoder's learnt latent space for clinical interpretation.

AWARDS

Dean's List (in both 3rd and 4th years) at Imperial College London : Award given to top 10% of cohort.

Honours Board : Award given to top performing students in 'Escola Domingos Sequeira' (secondary school).

TECHNICAL SKILLS

Languages: Python, C++, SQL (PostgreSQL), MATLAB.

Developer Tools: Git, AWS, Singularity, Terraform, CUDA, Linux-based systems.

Libraries: PyTorch, JAX, Gym/Gymnasium, MuJoCo, StableBaselines, NumPy, Pandas, Scikit-learn, Boto3.