

Robin Leman

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EDUCATION

University College London

MSc in Computational Statistics and Machine Learning.

September 2025 - September 2026

London, UK

- Coursework: Probabilistic and Unsupervised Learning, Approximate Inference, Bayesian Deep Learning, Supervised Learning, Reinforcement Learning, Generative AI, Open-Endedness and General Intelligence.

McGill University

BSc in Physics and Computer Science. CGPA: 3.82/4.00.

September 2019 - May 2022

Montreal, Canada

RESEARCH EXPERIENCE

Latent Dynamics Representations for Long-Horizon Consistency in World Models

UCL

Supervisor: Jagmohan Chauhan (Dept of Computer Science)

Ongoing

- Investigating hierarchical latent representations and decoupled dynamics to reduce feature drift in diffusion models.

Real Time Visualization of Debris Disks in Scattered Light and Thermal Radiation

McGill University

Supervisors: Eve J. Lee (Department of Physics), Clark Verbrugge (School of Computer Science)

2022

- Simulated debris disk morphologies by numerically solving Kepler's equation with Newton's method, rendering up to 10^7 particles at 60 FPS, with 1.56s loading time leveraging multi-threading.

WORK EXPERIENCE

Electronic Arts

July 2023 - September 2025

Software Engineer - C++

Vancouver, Canada

- Designed and implemented a high-performance Entity-Component-System library, optimizing memory layout for cache-efficient data access in highly parallelized simulations.
- Optimized cross-platform networking code for real-time replication, interpolation, and prediction, reducing memory usage.
- Developed a specification testing framework, enabling scalable automated validation and improving system resilience.

Relic Entertainment (SEGA)

June 2022 - June 2023

Associate Programmer - C++, Python

Vancouver, Canada

- Implemented QuadTree spatial partitioning and hierarchical state machine structures to accelerate nearest-neighbour queries for 1600+ entities.
- Optimized multi-threaded state tree data structures by 25%+, implementing highly performant squad-based AI behaviors.

Microsoft

May 2021 - August 2021

Software Engineer Intern - C++, Python

Vancouver, Canada

- Profiled UE5's physics systems, running performance analysis and benchmarks to optimize simulation on Xbox and PC.

Ubisoft

June 2020 - August 2020

Generalist Programmer Intern - C++, C#, Python

Montreal, Canada

- Designed a voxel-based fluid simulation algorithm for real-time buoyancy within a data-oriented architecture.

PERSONAL PROJECTS

Cart-Pole Reinforcement Learning Agents

| C++

- Implemented PPO and REINFORCE agents from scratch in C++, reaching 500 maximum reward in sub 250 batches.
- Built Adam, SGD, and SGD with momentum optimizers, running comparative analysis on variance and convergence.

Tiny-LLM

| Python, PyTorch

- Built and trained a 51M-parameter transformer in PyTorch, achieving a perplexity of 34 on WikiText-103 after 50k iters.

GPU-Accelerated Raytracer

| C++, CUDA, OpenGL

- Built a raytracer with CUDA and OpenGL interoperability, featuring progressive rendering for real-time visual feedback.

LEADERSHIP & VOLUNTEERING

UCL AI Society

| Head of Machine Learning Tutorials (2025-2026)

- Designed, organized, and lectured a 10-week tutorial series covering core machine learning concepts.

GameDev McGill

| President (2021-2022), VP Internal (2020-2021), Member (2019-2020)

- Led a 10-person executive team to organize hackathons, workshops, talks, and events for 100+ members.

SKILLS

Python, PyTorch, C++, CUDA, C, Rust, Bash, Java, C#, TensorFlow, OpenGL, Unreal Engine, Unity, Git, Linux