Thomas Creavin

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Experience

Adobe Research — Basel, Switzerland
Machine Learning Engineer – MLOps, Prompt Engineering — *September 2025 – Present*
Machine Learning Engineer Intern — *July 2024 – December 2024*

- Designed and deployed LLM observability for an Autogen multi-agent platform using Langfuse, DeepEval, and a custom E2E test framework leveraging real user feedback.
- Designed prompt workflows enabling internal users to request arbitrary data; agents retrieved relevant schemas from a CosmosDB vector datastore and generated accurate SQL queries for PostgresDB.

Roche — Remote, Switzerland
Data Engineer (Contract) – Python, MongoDB, Kubernetes, FastAPI, Svelte, CI/CD — *February 2024 – June 2024*

- Built a custom end-to-end data pipeline for storing, processing, and visualising large molecule experiment data now deployed to 100s of lab devices.

Jump Trading — London, United Kingdom
Software Engineer – Python, Go, Ansible, Kubernetes, Clickhouse, Blockchain — *July 2023 – September 2023*

- Built & deployed a Netflow collector in Go to store extremely-high throughput enriched network data in Clickhouse.
- Created an Ansible host health-monitoring library to improve deployment safety to our highly heterogeneous crypto clusters.

Atlantic Zeiser, Remote — Zürich, Switzerland
Software Engineer (Contract) – C#, AWS, OPC-UA — *August 2022 – February 2023*

- Successfully prototyped an AWS cloud solution to securely orchestrate IoT devices remotely for a Swiss manufacturing company. The client intends to patent the design.

Amazon Web Services — Dublin, Ireland
Software Development Engineer (AWS Simple Email Service) – Java, Spring, DevOps, On-call — *July 2021 – July 2022*
Software Development Engineer Intern (AWS Simple Email Service) — *March 2020 – August 2020*

- Implemented a re-architecture of our mail transfer agent thus increasing our email sending throughput by 10x.
- Created a CodeDeploy monitor to help partially-failed instances succeed thus reducing the overall deployment time.
- Created an EC2 monitor to record bootstrap metrics thus allowing the team to identify regressions in launch time and catch repeatedly failing deployments. Recognised as one of ten SES Ops Wins for 2021.
- Contributed a NoSQL time-series database and an adaptive CoDel queue to our standard library.
- Ran collegiate technical workshops and mentored students as part of the Amazon Discover programme.

Education

Max Planck Institute for Meteorology — Zürich
M.Sc Thesis in Collaboration with ETH Scalable Parallel Computing Lab — *February 2025 – July 2025*

- "Towards Stochastic Rounding for Real Applications" explores how high-precision calculations can be performed in low-precision on GPU with minimal increase in error. Accepted for publication in the *Transactions of ADIA Lab*.

ETH Zürich
M.Sc Computer Science: Machine Learning (Major), Software Systems (Minor) — *September 2022 – September 2025*

- **Courses:** Algorithm's Lab; Advanced Systems Lab; Principles of Distributed Computing; Geometry: Combinatorics and Optimisation; Probabilistic AI; Foundations of Reinforcement Learning; Big Data; Design of Parallel HPC.

University College Dublin — 3.99/4.2 GPA (95%); Rank 1 out of 115
B.Sc. Hons. Computer Science – First Class Honours — *September 2017 – August 2021*

- **Activities**: Netsoc chairperson; SISTEM Conference organiser; Class representative; Teaching assistant; Outreach workshop designer; Peer Mentor to new students; United States Embassy Young Leaders Council Member.

Publications

– **Thomas Creavin**, Alexandru Calotoiu, Torsten Hoefler. *Towards Stochastic Rounding for Scientific Applications*. Submitted to Transactions of ADIA Lab, 2025.

Projects

– **Julia vs C: Will it GPU?**: In collaboration with the ETH SPC Lab, I wrote highly optimistied kernels for PolyBench benchmark problems with low level CUDA API calls in MIT's Julia language to achieve NumPy/PyTorch like performance.

– **QuickRoster** (**B.Sc Final Year Project**): A fast serverless web application for rostering volunteers. Volunteer rostering is an instance of the nurse scheduling problem with unique constraints. I created a Gurobi MIP formulation to solve the problem and used supervised search-space pruning to compute near-optimal solutions 92% quicker. I deployed the optimised solver as a web app using AWS, Vue, Python, Javascript, and Docker.

– **High-performance Position Based Dynamics** (**PBD**): A highly-optimised implementation of the seminal PBD paper that archives a 90x speed-up over a naive implementation using C, AVX Intrinsics, and a Python benchmarking suite.

– **Deployment-efficient Reinforcement Learning Agent**: The first-ever implementation of a provably deployment-efficient RL agent trained on discrete (Frozen Lake) and continuous (Cart Pole) environments using Python and Gymnasium.

Achievements & Awards

– Awarded the John Kelly Memorial Medal for graduating top of my undergraduate class (rank 1 out 115 students).

– Nominated for best final year project.

– Awarded UCD Entrance Scholarship for outstanding Leaving Certificate results.

– Received UCD College of Science's *Excellence in Mentoring* award for my work as a Peer Mentor.

– Won UCD Societies Council's *Society Event of the Year* award for organising SISTEM 2020.

– Awarded the Pat Scanhill Medal by my secondary school for achieving the highest Leaving Certificate result in my year – my result is in the 98^{th} percentile nationally.

– Irish European Union Science Olympiad finalist.

– Black Belt in Shotokan Karate.

– AWS Certified Cloud Practitioner.