

Paul Elvinger

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Education

Sep 2022 – Feb 2025	ETH Zurich – MSc. Computer Science (GPA 5.71 / 6.0) <ul style="list-style-type: none">Master Thesis – “Towards resource and interference-aware scheduling of ML workloads on GPUs”. Wrote an ML cluster inference scheduler to improve GPU utilization by spatially colocating ML workloads on GPUs based on their resource requirements and interference patterns. (<i>Efficient Architectures and Systems Lab, supervisor: Prof. Dr. Ana Klimovic</i>)
Sep 2017 – Sep 2020	ETH Zurich – BSc. Computer Science (GPA: 5.4 / 6.0) <ul style="list-style-type: none">Bachelor Thesis – “Bomb the Internet, Infrastructure centralization and its weaknesses”. Simulated and analyzed the Internet’s undergoing process of centralization and its robustness to large scale failures on the physical layer. (<i>Network Security Group ETH Zurich, supervisor: Prof. Dr. Adrian Perrig</i>)

Work Experience

Oct 2024 – Jan 2025	ETH Zurich – Research Assistant , Zurich <ul style="list-style-type: none">Addressing the underutilization of GPUs by spatially co-locating multiple workloads in an interference-aware manner with a particular focus on ML inference. (<i>Sytems Group ETH Zurich, Prof. Dr Ana Klimovic</i>)
Mar 2021 – Apr 2023	Archlet – Data Engineer , Zurich (full time alongside studies) <ul style="list-style-type: none">Part of Archlet’s backend team and responsible for the integration, extension and monitoring of several Python based microservices hosted as part of a Kubernetes cluster in Azure.Contributed to the development of Archlet’s data pipelines and the operation of its optimization tool backed by mixed integer programming algorithms.Contributed to the technical transition into an event-driven microservice application using infrastructure as code.
Sep 2020 – Feb 2021	Oracle Labs – Research Assistant , Zurich <ul style="list-style-type: none">Improved the security of Java applications running in containers, using static analysis to automatically generate SELinux policies at application and function granularity. (led to US patent application)

Publications and Patents

EuroMLSys ’24	Foteini Strati, Paul Elvinger , Tolga Kerimoglu, and Ana Klimovic. 2024. “ ML Training with Cloud GPU Shortages: Is Cross-Region the Answer? ”. Proceedings of the 4 th Workshop on Machine Learning and Systems. April 22, 2024, Athens, Greece. ACM, New York, NY, USA, 10 pages.
US20230074580A1	Neugschwandtner Matthias, Hugo Guiroux, and Paul Elvinger . “ Runtime-tailored security policies for applications .” U.S. Patent Application No. 17/465,694 filed March 9, 2023.

Selected Projects

Sep 2023 – Jan 2024	Efficient SDDMM Algorithms on GPU – github.com/francois141/dphpc <ul style="list-style-type: none">Contributed to writing an efficient CUDA SDDMM implementation using adaptive tiling that outperforms Torch’s implementation on large matrices.
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Teaching

Spring 2024	Cloud Computing Architecture , ETH Zurich (Prof Dr. Ana Klimovic)
Fall 2018	Discrete Mathematics , ETH Zurich (Prof Dr. Ueli Maurer)

Programming Skills

Languages	Experienced: Python Intermediate: Java, C++, SQL (Postgres), Shell Scripting Basic: C, TypeScript
Dev tools + Frameworks	CUDA, Cloud Computing, Docker, Kubernetes, PyTorch, Linear Programming, Git, Unix, Vim
Cloud Infrastructure	Google Cloud Platform, Microsoft Azure

Languages

English, German, French – Full working proficiency; **Luxembourgish** – Mother tongue

Extra Curricula

Voluntary Work	Scout Group Leader – Daereldeieren Bridel (FNEL), Luxembourg <ul style="list-style-type: none">Organized weekly meetings for up to 50 children aged from 9 to 13 years.
Sport	Alpine Skiing <ul style="list-style-type: none">Luxembourg National Champion in Slalom 2017Luxembourg Athlete at European Youth Olympic Festival (EYOF) 2015 in Austria Golf (Hcp 6.6) <ul style="list-style-type: none">Luxembourg Team Champion 2015, 2016, 2017 Marathon Runner