Paul Elvinger

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Education

Sep 2022 – Feb 2025	**ETH Zurich – MSc. Computer Science (GPA 5.71 / 6.0)** • Thesis – Towards resource and interference-aware scheduling of ML workloads on GPUs. *(Systems Group ETH Zurich, supervisor: Prof. Ana Klimovic)*
Sep 2017 – Sep 2020	**ETH Zurich – BSc. Computer Science (GPA: 5.4 / 6.0)** • Thesis – Simulated and analyzed the Internet's undergoing process of centralization and its robustness to large scale failures on the physical layer. *(Network Security Group ETH Zurich, supervisor: Prof. Adrian Perrig)*

Work Experience

Oct 2024 – Jan 2025	**ETH Zurich – Research Assistant**, Zurich • Addressing the underutilization of GPUs by spatially co-locating workloads in an interference-aware manner with a particular focus on ML inference. *(Systems Group ETH Zurich, Prof. Ana Klimovic)*
Mar 2021 – Apr 2023	**Archlet – Data Engineer**, Zurich (full time alongside studies) • 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.
Sep 2020 – Feb 2021	**Oracle Labs – Research Assistant,** Zurich • 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

arXiv'25	**Paul Elvinger**, Foteini Strati, Natalie Enright Jerger, Ana Klimovic. 2025. Measuring GPU utilization one level deeper. arXiv preprint arXiv:2501.16909
EuroMLSys '24	Foteini Strati, **Paul Elvinger**, Tolga Kerimoglu, and Ana Klimovic. 2024. ML Training with Cloud GPU Shortages: Is Cross-Region the Answer?. EuroMLSys 2024.
US20230074580A1	Neugschwandtner Matthias, Hugo Guiroux, and **Paul Elvinger**. 2023. Runtime-tailored security policies for applications. U.S. Patent Application No. 17/465,694.

Selected Projects

Sep 2023 – Jan 2024	**Efficient SDDMM Algorithms on GPU** • Contributed to writing an efficient CUDA SDDMM implementation using adaptive tiling that outperforms Torch's implementation on large matrices. (Github)

Teaching

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

Programming Skills

Languages	Python, Java, C++/CUDA, SQL
Dev tools + Frameworks	NVIDIA Nsight Compute/Systems, PyTorch, Cloud Computing, Docker, Kubernetes, Linear Programming, Git, Unix
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 • Organized weekly meetings for up to 50 children aged from 9 to 13 years.
Sport	**Alpine Skiing** • Luxembourg National Champion in Slalom 2017 • Luxembourg Athlete at European Youth Olympic Festival (EYOF) 2015 in Austria **Golf** (Hcp 6.6) • Luxembourg Team Champion 2015, 2016, 2017 **Marathon Runner**