

# Paul Elvinger

Zschokkestrasse 6, 8037 Zurich, Switzerland | [elpaul@ethz.ch](mailto:elpaul@ethz.ch) | +352 661 828 192 | Swiss Residence Permit B | [Google Scholar](#) | [Github](#)

## Education

Sep 2022 – Feb 2025	<b>ETH Zurich – MSc. Computer Science (GPA 5.71 / 6.0)</b> <ul style="list-style-type: none"><li>Master Thesis – “<a href="#">Towards resource and interference-aware scheduling of ML workloads on GPUs</a>”. 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>)</li></ul>
Sep 2017 – Sep 2020	<b>ETH Zurich – BSc. Computer Science (GPA: 5.4 / 6.0)</b> <ul style="list-style-type: none"><li>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>)</li></ul>

## Work Experience

Oct 2024 – Jan 2025	<b>ETH Zurich – Research Assistant, Zurich</b> <ul style="list-style-type: none"><li>Optimizing GPU power efficiency and utilization through strategic and interference-aware workload colocation. (<i>Efficient Architectures and Systems Lab, Prof. Dr Ana Klimovic</i>)</li></ul>
Mar 2021 – Apr 2023	<b>Archlet – Data Engineer, Zurich</b> (full time alongside studies) <ul style="list-style-type: none"><li>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.</li><li>Contributed to the development of Archlet’s data pipelines and the operation of its optimization tool backed by mixed integer programming algorithms.</li><li>Contributed to the technical transition into an event-driven microservice application using infrastructure as code.</li></ul>
Sep 2020 – Feb 2021	<b>Oracle Labs – Research Assistant, Zurich</b> <ul style="list-style-type: none"><li>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)</li></ul>

## Publications and Patents

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

## Selected Projects

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

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

## Programming Skills

Languages	<b>Experienced:</b> Python <b>Intermediate:</b> Java, C++, SQL (Postgres), Shell Scripting <b>Basic:</b> 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	<b>Scout Group Leader</b> – Daereldeieren Bridel (FNEL), Luxembourg <ul style="list-style-type: none"><li>Organized weekly meetings for up to 50 children aged from 9 to 13 years.</li></ul>
Sport	<b>Alpine Skiing</b> <ul style="list-style-type: none"><li>Luxembourg National Champion in Slalom 2017</li><li>Luxembourg Athlete at European Youth Olympic Festival (EYOF) 2015 in Austria</li></ul> <b>Golf</b> (Hcp 6.6) <ul style="list-style-type: none"><li>Luxembourg Team Champion 2015, 2016, 2017</li></ul> <b>Marathon Runner</b>