Louis Chapuis

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PROFILE

Master's student in Computer Science specializing in Computer Systems at EPFL. Strong background in network architectures, distributed systems, and full-stack software engineering, complemented by hands-on experience in applied Machine Learning and self-hosted infrastructure management.

ACADEMIC & TECHNICAL PROJECTS

Network Verification and Synthesis using Fixed-Point Logic *EPFL (Networked Systems Abstractions Lab)*
Master's Semester Project (Ongoing)
- Applying formal logic to NetKAT to mathematically verify and guarantee network routing behavior.

OnionPeer – Decentralized P2P Network *EPFL*
Distributed Systems & Network Security (Go)
- Implemented a peer-to-peer network in Go featuring Tor-inspired packet cryptography (onion routing) and congestion control.

EndurAI – 2nd Prize, Best App of the Year *EPFL*
The Software Enterprise Course (Jetpack Compose, Computer Vision, ML)
- Developed an Android application leveraging Computer Vision and Machine Learning to assist users in sports training; awarded 2nd best project of the cohort.

Lausanne Time Machine & Applied ML Projects *EPFL*
Machine Learning, NLP & Data Pipelines (Python, PyTorch)
- **Lausanne Time Machine:** Built an automated data processing pipeline using LLM-based OCR for historical archive digitization.
- **Acoustic Optimization:** Designed and trained standard Neural Networks in PyTorch to optimize the physical shape of alphorns.

Homelab, Full-Stack Development & Open Source *Personal Projects*
Infrastructure (Linux, Docker) & Software Engineering (Scala)
- **Homelab:** Administering Linux servers (Ubuntu/Debian), service isolation via Docker Compose, UFW firewalling, and initial Kubernetes experiments.
- **Interactive Fiction Platform:** Designed a web platform for branching-narrative creation using Scala (Play Framework) and a REST API (ZIO HTTP).
- **Open Source:** Contributed a Pull Request to JetBrains IntelliJ IDEA.

PROFESSIONAL EXPERIENCE

IT Service Desk Operator *CHUV (Lausanne University Hospital)*
Since December 2025
- Resolving IT and network incidents in a critical hospital environment under strict security policies.
- Managing ticketing workflows and maintaining rigorous technical documentation.

EDUCATION

Master in Computer Science – "Computer Systems" Specialization *2025 – Present*
EPFL
- **Key courses:** Systems for data management and data science (5.5), Advanced networks (5.25), Decentralized systems engineering (5.0), Machine learning, Natural language processing, Software security.

Bachelor in Computer Science *2022 – 2025*
EPFL
- **Highlights:** The software enterprise (5.25), Artificial intelligence (5.0), Introduction to machine learning (5.0), Parallelism and concurrency (5.0), Software construction (5.0).

SKILLS

- **Networking & Systems:** TCP/IP, BGP, OSPF, IPv6, Linux (Ubuntu/Debian), Docker, Kubernetes (basics), Git, GitHub Actions.
- **Programming & Frameworks:** Scala (Play & ZIO), Go, Python (PyTorch), Java, Kotlin (Jetpack Compose), Bash, REST APIs.
- **Languages:** French (Native), English (C1), German (A2/B1).