

Dion Osmani

EDUCATION

HES-SO, School of Engineering

BSc Computer Science and Communication Systems, Data Engineering

Sion, VS

August 2022 – Sept. 2025

Technical and Vocational School

Federal VET Diploma in IT, Systems and Networks, [view certificate](#)

Sion, VS

Aug. 2018 – June 2022

Technical Matura, [view certificate](#)

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EXPERIENCE

HES-SO, School of Engineering - Informatics Institute (SIMLab)

September 2025 –

Research Assistant

Sion, VS

- Contributing to research in scientific and industrial machine learning, focusing on hybrid modeling, and explainable AI in collaboration with academic and industry partners.
- Assisting in diverse classes, including *Introduction to Programming* and *Computational Physics*, supporting instruction and student learning.

HES-SO, Infrastructure Competency Center

August 2021 – July 2022

Intern, [view certificate](#)

Sion/Sierre, VS

- Designed and developed an automatic naming and categorization system for virtual machines in a vSphere environment.
- Developed a progressive web application to facilitate the creation of virtual machines by business users, thereby reducing the workload of system administrators.

EXTRACURRICULAR ACTIVITIES

Career Promotion

August 2022 –

Facilitator

VS

- Presented educational opportunities that provide access to university-level education, explaining possible career paths to young people.
- Raised awareness among students about artificial intelligence, presenting the current state of the field and its practical applications.

PROJECTS

PETAL

github.com/dij0s/PETAL

Academic Project - BSc thesis

- Designed and implemented a modular multi-agent AI architecture for municipal energy planning, orchestrating specialized agents using LangGraph.
- Engineered a scalable, fully open-source architecture using containerization and modular design principles, enabling seamless integration of conversational AI, real-time data storage, and interactive web interfaces.
- Prioritized user experience by implementing a conversational interface with adaptive preference memory and interactive geospatial visualization, supporting actionable, guideline-compliant recommendations for Swiss municipalities.
- Developed a robust evaluation framework combining domain expert assessment and automated LLM-as-a-judge benchmarking (G-eval), demonstrating statistically significant improvements in contextual reasoning and structured planning with larger language models.

AMR

github.com/dij0s/AMR

Academic Project

- Developed an Adaptive Mesh Refinement (AMR) algorithm in Python, optimizing computational resources with a $\sim 95\%$ reduction in execution time.
- Implemented an efficient Quadtree/Octree data structure for numerical simulation, with a $\sim 92\%$ reduction in memory usage.
- Solved heat diffusion equations using a second-order finite difference scheme, validated by comparison with a reference solution.