

# Dion Osmani

## EDUCATION

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<b>HES-SO, School of Engineering</b> <i>BSc Computer Science and Communication Systems, Data Engineering</i>	Sion, VS August 2022 – Sept. 2025
<b>Technical and Vocational School</b> <i>Federal VET Diploma in IT, Systems and Networks, <a href="#">view certificate</a></i> <i>Technical Matura, <a href="#">view certificate</a></i>	Sion, VS Aug. 2018 – June 2022 "

## EXPERIENCE

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<b>HES-SO, School of Engineering - Informatics Institute (SIMLab)</b> <i>Research Assistant</i>	September 2025 – Sion, VS
<b>HES-SO, Infrastructure Competency Center</b> <i>Intern, <a href="#">view certificate</a></i>	August 2021 – July 2022 Sion/Sierre, 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.

• 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

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<b>Career Promotion</b> <i>Facilitator</i>	August 2022 – 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

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<b>PETAL</b> <i>Academic Project - BSc thesis</i>	<a href="https://github.com/dij0s/PETAL">github.com/dij0s/PETAL</a>
• 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.

<b>AMR</b> <i>Academic Project</i>	<a href="https://github.com/dij0s/AMR">github.com/dij0s/AMR</a>
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- 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.