Dion Osmani

Education

HES-SO, School of Engineering — Sion, VS
BSc Computer Science and Communication Systems, Data Engineering — *August 2022 – Sept. 2025*

Technical and Vocational School — Sion, VS
Federal VET Diploma in IT, Systems and Networks, view certificate — *Aug. 2018 – June 2022*
Technical Matura, view certificate — ”

Experience

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.
- Promoted the program to young audiences by managing information booths and engaging in discussions about careers in the sector.

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.
- Applied professional development practices including extensive unit testing, continuous integration (GitHub Actions), and detailed technical documentation.

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