JULIETTE PARCHET

EPFL GRADUATE, MASTER IN DATA SCIENCE

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PROFILE

Recent EPFL Data Science graduate with strong academic and industrial experience in machine learning, computer vision, and data-driven applications. At Schindler, I turned ML research into production-ready tools, improving accuracy and scalability. My projects range from VR game development to explainable AI and LLM fine-tuning, with results recognized in both academia and hackathons.
I bring a mix of technical rigor, software engineering skills, and clear communication. I am currently looking for opportunities where I can apply my skills, keep learning, and contribute to meaningful real-world challenges.

TECHNICAL SKILLS

- **Programming**: Python, Java, C++, C#, C, SQL
- **Machine Learning & AI:** PyTorch, TensorFlow, Scikit-learn, Hugging Face; Computer Vision, NLP, LLMs, XAI
- **Data**: databases, statistics, Pandas, NumPy, data wrangling, Matplotlib, Seaborn; Apache Spark
- **Tools & Cloud**: Git, Docker, Microsoft Azure, Jupyter Notebook, VS Code, Linux

EDUCATION

Master in Data Science **Sept. 2022 — Mars 2025**
EPFL (Swiss Federal Institute of Technology), Lausanne
Graduated with 5.17/6 GPA.

Bachelor in Communication Systems **Sept. 2018 — July 2022**
EPFL (Swiss Federal Institute of Technology), Lausanne
Graduated with 4.91/6 GPA.

Teacher Training Program (Secondary Level II) **Aug. 2023 — July 2024**
HEP (Haute Ecole Pédagogique), Lausanne

Bilingual English Maturité (secondary diploma) **Sept. 2015 — July 2018**
Ecole Moser, Geneva
Diploma obtained with honors and with a language Award (English, German, French)

WORK EXPERIENCES

6-months Computer Vision Internship, Schindler Group, Lausanne **Sept. 2024 — Feb. 2025**
Developed computer vision solutions to reconstruct 3D building surfaces and simulate heat flow for renovation planning.
- Built and optimized end-to-end ML pipelines for 3D reconstruction using NeRF, SDF, and Plenoxel techniques.
- Collected, processed, and prepared datasets for training, testing, and inference.
- Refined models to improve accuracy and robustness, enabling simulation-ready outputs.
- eployed scalable workflows with **Docker and Microsoft Azure**, ensuring reproducibility.
- Collaborated with stakeholders, presenting results and coordinating project milestones.

One-year Computer Science Teacher, High School, Nyon **Aug. 2023 — July 2024**
Taught coding and computational thinking, adapting complex computer science concepts for high school students.
- Designed Python projects and guided students on debugging, code structure, and algorithms.
- Mentored students, fostering problem-solving and computational thinking.
- Created lesson plans and assessments to track progress and engagement.
- Learned to adapt teaching methods to diverse skill levels and learning styles.

One-year PyGirls Tutoring, Boston Consulting Group, Online **Apr. 2022 — Apr. 2023**
Led online Python sessions for groups of up to 5 beginner students, mentoring programming and problem-solving skills.
- Fostered engagement and collaborative problem-solving among participants.
- Designed tailored learning materials and collaboratively optimized curriculum for online teaching.

ACADEMIC PROJECTS

Virtual Reality Game Development, EPFL, Lausanne **Feb. 2024 — May 2024**

Developed in a team a cross-platform VR game in Unity (C#) for immersive interaction and 3D spatial navigation.

- Built a gesture recognition system using 3D motion calibration, Fourier shape analysis, and real-time input tracking.
- Applied UX optimization techniques and design iteration to improve immersion and reduce cybersickness.
- Integrated Oculus SDK and collaborated via Git/GitHub with agile methods. Project recognized by TA for quality.

Actionability of Explainable AI (XAI), EPFL, Lausanne **Sept. 2023 — Jan. 2024**

Investigated how XAI methods can improve interpretability and actionability of black-box neural networks in education.

- Analyzed large volumes of explainer outputs and extracted meaningful statistics to support human decision-making.
- Designed visual and textual explanation formats (feature-based, model-driven, LLM-generated).
- Conducted user studies with stakeholders to evaluate trust, usability, and decision-making.
- Identified effective hybrid explanations to support actionable insights.

Deep Image Translation via Diffusion Models, EPFL, Lausanne **Feb. 2023 — May 2023**

Generated synthetic image pairs and trained a lightweight image translation model for domain adaptation.

- Evaluated diffusion-based computer vision models to create paired datasets (original vs. 100-year-old-aged images).
- Designed and trained a U-Net architecture (PyTorch) for image-to-image translation under limited compute resources.
- Achieved strong generalization on both synthetic test sets and unseen real-world images.

LLM Fine-Tuning for Math QA, EPFL, Lausanne **Feb. 2023 — May 2023**

Contributed to a team project fine-tuning large language models for domain-specific mathematical reasoning.

- Used transformers, Hugging Face, and PyTorch for fine-tuning.
- Annotated and applied chain-of-thought datasets and evaluated reasoning performance.

User Preference Modeling, EPFL, Lausanne **Sept. 2022 — Dec. 2022**

Modeled user behavior and preferences from raw beer-rating data to improve UX strategies.

- Applied large scale data wrangling, clustering, collaborative filtering, and statistical analysis using Python, Pandas, and Scikit-learn.
- Produced a reproducible report with interactive data visualization, developing strong teamwork and reporting skills.

LANGUAGE

English: C1 / Fluent (One-year exchange in UK)
French: C2 / Native
German: A2 / Basic

EXTRA-CURRICULAR ACTIVITIES

Hackathon, EPFL, Lausanne **Apr. 2025**

Ranked 2nd at the Lemanic Life Science Hackathon 2025 with the Tumorscope Project .

Prototyping and Gaming, Online

Indie video game development, see projects.

Art, Conservatoire Populaire de Musique, Geneva

Practice of classical piano for 8 years with regular training and recitals.

Sport, Swiss and International

Active participation in competitive sailing and badminton.

REFERENCES

Dr Malcolm Mielle at Schindler Group (contact information available upon request)