Bastien Golomer

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Education

Sept. 2020 to Sept. 2023 — **Msc in Physics**, *Ecole Polytechnique Fédérale de Lausanne (EPFL)*, CH
Key courses: Advanced particle accelerator physics (doctoral course), Particle physics, Quantum Field Theory, Topics in Nuclear and Particle physics, Astroparticle physics, Physics against Cancer (ETH Zurich)
Minor in Data Science
Key courses: Machine learning (ML), Optimization for ML, Applied Data Analysis, Database Systems

Sept. 2017 to Jul. 2020 — **Bachelor in Physics**, *EPFL*, CH
Special interest in **Particle physics and Astrophysics**

2017 — **French Scientific Baccalaureate**, *Lycée Internationale de Ferney Voltaire*, France

Work Experience

Sep. 2022 to Mar. 2023 — **Internship**, *Paul Scherrer Institute (PSI)*
- "Differentiable Influence matrix calculation using automatic differentiation" using Julia language
- Shared project between the AMAS Lab and the Center for Proton Therapy

Jul. 2019 to Sept. 2020 — **Physics Outreach**, *Physics department of EPFL*
- Developed 100+ explanatory web-pages for physics experiments shown in lectures (french)
- Description of physics phenomena, mathematical concepts and experimental setups
Website: `https://auditoires-physique.epfl.ch/`

Projects

2023 — **"Beam Angle Selection of Non-Coplanar Fields in Proton Therapy"**, *Msc Thesis*, EPFL, PSI
Developement of novel techniques for optimal proton beam incidence prediction based on patient geometry and dosimetric requirements.

2021 — **"Road segmentation with a Double U-Net"**, *Machine Learning Course*, EPFL
Studied a new architecture of convolutional neural networks for road segmentation of satellite images.

2021 — **"Estimation of the Sacherer tune shift with perturbed mode spectra"**, *Particle Accelerator Physics Laboratory (LPAP)*, EPFL
Studied a new approach for a Vlasov Solver, in partnership with CERN.

2020 — **"Feasibility study for a muon source based on a long magnetized target for collider application"**, *LPAP*, EPFL
Analysis of the feasibility of magnetic elements following requirements of a muon source.

Skills

Programming languages
- **Python**: Numpy, Matplotlib, Seaborn, Pandas, Scipy, Sci-kit
- **Julia**: Flux, Zygote, Enzyme
- **Bases**: C++, SQL, Matlab, bash, Slurm

Languages
- **English**: Cambridge CAE certification C1
- **German**: B1-B2
- **French**: Native

Volunteering

2021 — **Nuit de la Magistrale, 1st Ed. - President**
Student-organized event on EPFL's graduation ball/party at the SwissTech Convention Center
- Recruited and managed a team of 20 for 8 months. Implemented sustainable structures and work processes.
- 2200 participants (sold-out), including EPFL's leading board

2019 - 2022 — **Festival Balélec 40th Ed. - Member of organising committee**
Responsible for **site lighting**. Student-organised festival with +15000 participants. Work implied team coordination and management, project management.

2019-2022 — **Member of AGEPoly (General student association of EPFL)**
1) **Student Representation**(2020). Focus on sustainability at EPFL; 2) **Prevention** team (2021-2022). Focus on students' work environment and alcohol over-consumption.

About me

Judo : Black Belt 1st Dan   **Music** : Guitar player. Performed several times.