

# ERIC RICHTER

Citizenship: Switzerland, Sweden

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Supporting documents: <https://github.com/errichter/CV>

## SUMMARY

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What I bring to any team is a polytechnical skill set and a strong work ethic. I learn fast, work effectively, and strive for personal and team growth. I'll rise up to the challenge with creativity, curiosity, positivity, kindness, drive, and high standards for quality.

## EDUCATION

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### BU, Boston University

*Academic Research Project in the Lubner Group*

Boston MA, United States

*Sep. 2024 - Feb 2025*

### ETHZ, Swiss Federal Institute of Technology

*MSc in Mechanical Engineering GPA: 5.49 (max 6)*

Zürich, Switzerland

*Sep. 2022 - Mar 2025*

### EPFL, Swiss Federal Institute of Technology

*MSc in Micro- Engineering GPA: 5.30 (max 6) (discontinued)*

Lausanne, Switzerland

*Sep. 2021 - Aug. 2022*

### EPFL, Swiss Federal Institute of Technology

*BSc in Micro- Engineering GPA: 5.23 (max 6)*

Lausanne, Switzerland

*Sep. 2018 - Jun 2021*

### USJ, Saint-Joseph University of Beirut

*Off-Curriculum Studies*

Beirut, Lebanon

*Sep. 2017 - Dec. 2017*

### CESS, Gymnase de Nyon (High-School)

*Specialization in Physics and Music GPA: 5.49 (max 6)*

Nyon (VD), Switzerland

*Sep. 2014 - Jul. 2017*

- Prize of best student in Physics
- Prize of best student in Biology

## WORKING EXPERIENCE

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### The Lubner Group at Boston University

*Research Fellow*

Boston, MA, United States

*Feb. 2025 - Current*

- Main Task: Aid in the development of a thermal wave sensor (cleanroom and electronics). Numerical simulation of mass transport in python.

### Sensirion

*R&D Engineering Intern*

Stäfa, Switzerland

*Sep. 2023 - Feb. 2024*

- Main Task: Proof of concept of a next generation humidity reference using PID control of a metastable system in C++ and Arduino.
- Results: State of the art accuracy achieved with 1/100th price.

### EPFL

*Teaching Assistant in Mathematical Analysis*

Lausanne, Switzerland

*Feb. 2021 - Jul. 2021*

- Main Task: Supervising exercise/quiz sessions twice a week.

### Swiss Army

*Intelligence Soldier in the Air Force*

Switzerland

*Feb. 2018 - May. 2018*

## ACADEMIC PROJECTS

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### Master's Thesis on the Theme of Mass Transport in Solid Sorbent

ETHZ - BU

*Lubner Group in the MSE Departement of Boston University*

*Sep. 2024 - Feb. 2025*

- Task: Building and understanding a toy python numerical model, its insights about the model physics and its limitations.
- Methods: Explicit numerical simulation of the diffusion-reaction equation based on Fick's diffusion and Langmuir reaction kinetics.
- Results: Although insightful as to the mechanics underlying adsorption kinetics in porous media and the dangers of fitting data unconsciously, the numerical method used and physical model chosen are too computationally intensive and insufficiently separable to be more relevant than semi-empirical models.

### Machine Learning Semester Project

ETHZ - UZH

*Emerging Intelligent Substrates Group at the Institute for Neuro-Informatics (INI)*

*Mar. 2023 - Jul. 2023*

- Task: Discovery of a low-power neural architecture through evolutionary methods for solving the spiking Heidelberg digits (SHD) dataset.
- Methods: Genetic algorithm applied to nodes, connections, and delays of a sparsely connected random network to obtain solution networks with small world properties suitable for low power few shot learning on the edge.
- Results: slow convergence of the evolutionary method and impossibility of escaping local minima show the method is ineffective for this task.

### Nano-Engineering Semester Project

EPFL

*Micro-Systems Laboratory*

*Feb. 2021 - Jun. 2022*

- Task: Design of a superconducting electromagnetic S-shaped resonators for high accuracy resonance frequency based parallelized temperature measurements in cryostats for quantum computing applications.
- Methods: COMSOL electromagnetic simulations toolbox.
- Results: Scientific paper abstract was submitted for presentation at CERN.

### Robotics Semester Project

EPFL

*Mobile Robotics Lab as a part of the Hiveopolis Project*

*Sep. 2021 - Jan. 2022*

- Task: Design, fabrication and automation of a 1D measurement system for vibrational characterization of tweaked bee combs for human-bee communication.
- Methods: 3D printing, machining and mounting of a screw based linear displacement actuator. RPi controlled stepper motor programmed with trapezoidal acceleration profiles in python. Vibrational data collected with a laser Doppler vibrometer.
- Results: Working automated measurement system submitted and built upon.

## EXTRACURRICULAR PROJECTS

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### ShARE's Leadership Program

EPFL - International

*Consultant and Team Leader*

*Sep. 2020 - Nov. 2022*

- Interim Vice-Presidence (2022): Planning and organization of the 2022 Autumn Semester.
- Consultant for a start-up in Online Shopping (2022): Second hand online clothing platforms.
- Consultant for a start-up in Luxury (2021): High-end tech-watches.
- Consultant for a start-up in Medical Devices (2021): AI enhanced stethoscope for lung disease diagnosis.

### International Genetically Engineered Machine Competition (IGEM)

EPFL

*Head Engineer and Laboratory Technician*

*Feb. 2021 - Nov. 2021*

- Description: design and synthesis of a yeast cell capable of filtering copper from water for depollution of the soils in vineyards.
- Project: project selection, definition, literature review, and planning of experimental and technical tasks.
- Communication: stakeholder interviews, school visits, production of a podcast (on spotify).
- Technical: design, prototyping, and testing of a bioreactor for continuous treatment of water. Laboratory support for biological and chemical procedures and experiments.
- Results: Gold medal, prize for best website, nomination for best project in the environmental category.

## LEADERSHIP

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### Event Organizer for the Energy Students Student Committee (EMC2)

ETHZ - EMC2

*Host*

*May 2024*

- Main Task: Organization and hosting of a panel discussion between experts on carbon pricing policies in Europe and in Switzerland and their alternatives.

### Vice-President for EPFL at ShARE's Leadership Programme

EPFL

*Vice-President*

*Mar. 2022 - Dec. 2022*

- Task: Planning and organizing the local association with respect to the university and business partners.
- Results: Secured a set of start-ups and teams to work on consulting projects. Set up training plan for mentors as well as new arrivals in the association.

### Team Leader at ShARE's Leadership Programme

EPFL

*Mentor*

*Sep. 2021 - Dec. 2021*

- Training of the next generation of "do well do good" ShARE EPFL consultants.

## LANGUAGES

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**English** (Native), **French** (Native), **German** (Proficient), **Swedish** (Intermediate), **Italian** (Beginner), **Levantine Arabic** (Beginner)

## PROGRAMMING LANGUAGES

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**Proficient:** Python, C++

**Intermediate:** Arduino, C, VHDL, Matlab.

**Familiar:** Java, C#, Javascript

## PERSONAL INTERESTS

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**Sports:** Mountain Sports, Water Sports, Bouldering, Tennis, Ice Hockey.

**Music:** Formally trained as a pianist, informally playing any other instrument I can get my hands on.

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