Clarence Provenaz



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clarepz.github.io/Portfolio

Zurich, Switzerland

23.03.2005

French, soon Swiss, Canadian

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LANGUAGES

English – Fluent C1

French – Mother tongue

German – B2

Chinese – Conversational

Japanese – Learning

SKILLS

CAD
Catia, Fusion 360, Rhino
Compliant mechanisms

Machine learning
Reinforcement learning (RL), imitation learning (IL), Isaac Lab, PyTorch

Programming
Python, C++, ROS 2, MATLAB, AVR assembly

Electronics
PCB design, hand soldering, LTspice, FPGA, motor control

Fabrication
Machining, FDM 3D printing (slicing, troubleshooting)

INTERESTS

Sport
Swimming (former national level competitor), running, cycling

Music
Guitarist in a band, composing and recording songs

EDUCATION

ETH Zurich, Robotics, Systems and Control Master's — 09/2026 – Present

Institute of Science Tokyo, bachelor exchange year with EPFL — 10/2025 – 08/2026 | Tokyo, Japan

EPFL, Microengineering Bachelor degree — 09/2023 – 08/2026 | Lausanne, Switzerland

Gymnase de Nyon, Swiss Maturité, Maths and Physics — 09/2020 – 07/2023 | Nyon, Switzerland

EXPERIENCE

ETH Robotics Club, Hardware team, Brain Robot Interface project — 09/2026 – Present
Developing an EMG-based upper-limb prosthesis. In charge of designing and prototyping the underactuated hand and its low-level control.

Teacher Assistant, EPFL — 09/2024 – 06/2025 | Lausanne, Switzerland
Helping students during exercise sessions in Algebra, Analysis, Electrotechnics and Mechanical Construction (Dr. Giordano Favi, Prof. Ileana-Cristina Benea-Chelmus, Dr. Sébastien Soubielle).

Haleon, Summer job — 06/2023 – 08/2023 | Nyon, Switzerland
3D scanned open spaces, false ceilings and a basement, and modelled a building in Rhino. Combined everything in an interactive 3D viewer as a proof of concept for managing the site's infrastructure.

Swim Coach, Cercle des nageurs de Nyon — 2021 – 2023 | Nyon, Switzerland
Giving swimming lessons to teach children to swim and progress. Supervising a group of swimmers with intellectual disabilities.

PROJECTS

Underlined names link to photos, videos and write-ups on **clarepz.github.io/Portfolio**

- **In-hand reorientation with RL** (ETH Zurich, Real-World Robotics, team, 2026): reinforcement-learning policy in Isaac Lab rotating a cube in a robotic hand (ORCA v1), with sim2real so it works on the real hand.
- **Color-based sorting with IL** (ETH Zurich, Real-World Robotics, in progress): pick and place by color with a Franka arm and ORCA hand. We teleoperated the robot, recorded the episodes and trained the policy on them.
- **FlyForce compliant mechanism** (EPFL, team of 5): 3-axis force sensor made only of flexure hinges and balanced against sensor acceleration (translation and rotation), 0.3 mN resolution. Designed and sized, not built.
- **Robot vacuum in AVR assembly** (EPFL, team of 2): autonomous room-sweeping robot on an ATmega128L. Also an **FPGA alarm clock** (EPFL, team of 2) built from logic gates.
- **Forest winch** (EPFL, team of 4): hand-cranked 3.5 kN winch with 15:1 gearing.
- **CNC router** (personal, 2022 – present): 1000 × 500 mm work area for wood and soft metals, precision goal under 0.1 mm. Machining, CAD, electrical and firmware design.
- **Solar-powered RC airplane** (Swiss Matura thesis, 2023): radio-controlled plane flying on solar cells only, without battery.
- Personal builds: **mechanical keyboard** (PCB, firmware, printed case), **electric drift trike** (reused hoverboard motors), guitar pedals, home automation and more.

ORGANISATIONS

Swiss Solar Boat, Life cycle assessment team — 2024 | EPFL
Assessed the environmental impact of the student association's project, a competition-winning solar-powered manned hydrofoil boat.

Paléo Festival, Volunteer — 2023 – 2024 – 2025 | Nyon, Switzerland
Volunteering in site cleaning after the festival ends.