

# JOSHUA FREEMAN

British and French citizen interested in software engineering, computer vision, NLP, and quantum computing research.

## Education

**09/2023-07/2025:** Master of Science, Computer Science, ETH Zürich, Switzerland.

**10/2022-08/2023:** Year abroad in Computer Science, University of Oxford, United Kingdom.

**09/2020-08/2023:** Bachelor of Science, Computer Science, Ecole Polytechnique Fédérale de Lausanne, Switzerland.

## Languages

**Natural languages:** Fluent in **English** and **French**. Intermediate (B2) in **Spanish**. Basic level ( $\approx$ A2) of **Hebrew**.

**Programming languages:** Projects/courses: Python, Java, Scala, VHDL, MIPS and NIOS ASM, LaTeX, Git, and C. Experience with Haskell, ML languages, Mercurial, ARM ASM.

## Projects

- Java implementation of the board game Ticket to Ride (in class). Got >90%.
- C implementation of an encrypted database, in the style of the SIGNAL protocol (in class). Got >90%.
- NiosII ASM implementation of a Snake game on an FPGA (in class). Got 100 (full marks).
- VHDL multi cycle processor on an FPGA (in class). Got 100 (full marks).
- Re-thinking the Natural Language Processing Word2Vec paper (see HPShape on github).
- Computer Vision, software engineering:
  - “Recognition of unexploded ordnance using transfer learning”. Preparing classification models to help Ukrainian deminers. Collecting the train dataset via different methods, fine-tuning different models. Mostly using CLIP with grad-cam. Achieved 80+% accuracy.

## Experience

- Student researcher, *Oxford Quantum Group* (05/2023-08/2023).
  - 4 months of research in Foundations of Quantum Physics in the Oxford Quantum Group.
  - 1h long presentation on Spekken's toy theory.
- Meals officer, *the Jewish Society of Oxford* (03/2023).
  - Organised Shabbat and weekday meals for 8 weeks. Attended by 100+.
  - Organised a collaboration between JSOC and the Gatehouse, a local soup kitchen.
- Teaching Assistant in physics, *EPFL* (09/2021-12/2021).
  - Mentored 50+ first-year students in Physics-101, delivering weekly interactive classes on Newtonian principles.
- Guitar teacher, *Self-employed* (01/2022-06/2022).
- Founder and secretary, *EPFL's philosophy society* (08/2021-80/2022).
  - Organised conferences and workshops, welcoming 40+ people.
- Founder, *Students for Students* (08/2021-09/2021).
  - Co-writing and teaching of the [physics lesson](#) in 2021 (first edition).
  - Managed and led a team of 73 people (details at <https://s4s.fun>).
  - First edition: 140+ students. Second: 500+ students (in 2022, only tutored and co-wrote the lesson).
- Volunteer, *Entraide Le Relais* (06/2020-07/2020).
  - Furnished a 45 room halfway house.
- Volunteer, *Oxford Gatehouse* (12/2022-06/2023).
- Volunteer, *Lausanne Soup Kitchen* (01/2021-09/2022).
- Helpline volunteer, *Abrapa* (03/2020-04/2020)
- LaTeX typesetter, *Self-employed* (03/2020-03/2020).

## Distinctions (talks, publications, ...)

- Published in Anthology of Rimbaud competition. (classical poetry). 70th+ percentile of 1000+.
- Published in *The Poor Print* (classical poetry).
- Talk at TEDxEcublens x EPFL Open Days on Transfer Learning in the AI revolution.
- Top 100 in IMC Trading's Prosperity Trading Challenge.

## LEARNING

- 6/6 in physics I.
- 5.75/6 in Advanced information, computation, communication.
- 5.75/6 introduction to Machine Learning.
- 5.5/6 in Theory of Computation.
- 2022-2023 grades not available yet.
- 5.75/6 in Linear Algebra.
- 5.5/6 in practice of object-oriented programming (java).
- 5.5/6 in Probabilities and Statistics.