04/2023

JOSHUA FREEMAN

ACADEMICS

2022-2023: University of Oxford, Visiting Studentship. Research in Quantum Causality theory in the Oxford Quantum Group (quantum computing).
2020-2023: EPFL, bachelor's degree in computer science.

LANGUAGES

Natural languages: Fluent in **English** and **French** (GB and FR citizen). Intermediate (B2) in **Spanish**. Basic level (≈A2) of **Hebrew**.
Programming languages: Projects/extensive courses: Python, Java, Scala, VHDL, MIPS and NIOS ASM, LaTex, Git, and C. Experience with Haskell, ML languages, Mercurial, ARM ASM.

PROJECTS

- tCHu: Java implementation of the board game Ticket to Ride (in class).
- CryptKVS: C implementation of an encrypted database, in the style of the SIGNAL protocol (in class).
- Snake: NiosII ASM implementation of a Snake game on an FPGA (in class).
- NIOS: VHDL multicycle processor on an FPGA (in class).
- NLP: Python, implementing the Word2Vec paper on a project called HPShape (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. Did a **TEDx Talk** on this project.
  - Upcoming: Finetuning models for segmentation of butterflies in photos. Contracted volunteer for Der Vlinderstichting (Danemark).
- Other: Various bots on Telegram and Discord, mostly in Python (see github).

TEACHING

- Student assistant in Physics-101 for Pr Bréchet. Guided first-year bachelor students in understanding the content of the course and the principles of Newtonian physics. Helped the students develop a rigorous and methodical approach to solve the exercises and develop sharper problem-solving skills.

TEAMWORK AND LEADERSHIP

- Founder and secretary of EPFL's philosophy society (organizing conferences and workshops, see linktr.ee/EPphilo).
- Founder of free preparatory week *Students for Students* (s4s.fun). Co-writing and teaching of the physics lesson. Responsible for a team of 73 people. 2021 week attended by >140 students. 2022 edition attended by >500 students (only tutored and co-wrote the lesson in 2022).
- Team leader at the French EEIF scouts.

RELEVANT GRADES

- 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.
- 5/6 Parallelism and Concurrency.
- Taking databases, continuous optimisation.
- 5.75/6 in Linear Algebra.
- 5.5/6 in practice of object-oriented programming (java).
- 5.5/6 in Probabilities and Statistics.
- 5.5/6 Computer Networks.

OTHER INTERESTS

VOLUNTEER WORK

- Setting up the furniture in a maison-relais with Entraide Le Relais.
- Restos du coeur Strasbourg : organization of food distribution.
- Oxford gatehouse volunteer, organising Jewish Society/gatehouse volunteering.
- Helpline volunteer at Abrapa for the covid crisis.
- Lausanne soup kitchen cooking and serving.
- Meals officer for the Jewish society of Oxford. Organising 7 meals/week.

POETRY

- Published in
  - Anthologie du concours Rimbaud (classical poetry).
  - Oriel College student newspaper (classical poetry).

JOBS

- LaTex freelance typesetting (March 2020). Teaching guitar (January to June of 2022).

INTERNSHIPS

- Junior discovery internship at the European Justice court, in the office of the Estonian judge.

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