Jade Therras

Master student at EPFL
French, English

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Formation

09/2022 - 08/2025

Master in neurosciences, neurotechnology and neuro-computation
EPFL - neuro-X department
Current grade 5.56/6

10/2019 - 08/2022

bachelor in Life sciences engineering
EPFL - SV department
5.01/6 first year
5.44/6 bachelor cycle

Skills

programming language

Advanced Python, C++, matlab, R, Kotlin, godot, latex
Intermediate C#, JS, CSS, HTML, React
familiar : Julia, C

CAD modeling & simulation

Solidworks

Software

Programming Android Studio, Visual Studio, Unity, Godot...
Desktop Excel, Overleaf, Illustrator, Word office, canva

Soft skills

leadership and teamwork
teaching and communication
problem-solving

Who am I ?

I'm an insatiable learner, always in quest of new interesting subjects and new skills, and passionate about rehabilitation. After a bachelor's in Life Sciences Engineering at EPFL, I chose the highly interdisciplinary master of Neurotechnology, allowing me to develop my skills in programmation, biology and microtechnics. I'm now searching for a meaningful master's thesis starting in February/March.

Internship

R&D in biomechanical solutions at Össur   `09/2022-02/2023`
ÖSSUR, Reykjavik, Iceland
Key words Prostesis, Solidworks, 3D printing, prototyping, python, clinical testing.

Development of knee and foot prosthesis for amputees. I focused on prototyping a spring system to improve the stance flexion on a mechanical knee. Secondly, I developed a friction test system suitable for several knee prostheses. I prototyped the testing set-up (3D printing, aluminium), tested it and developed a user-friendly computer interface. Finally, developed a screw-free modular foot pyramid.

Semester and personal project

Development of a wearable EMG sensor (grade 5.5/6)   `02/2024 - 08/2024`
Key words EMG, dry electrode design, python

Aiming to develop a high-quality EMG device usable in rehabilitation, we developed a wireless active flexible microneedle-array-electrode system, suitable for long-term recording of muscle activity signals and high-quality recording and filtering. Both the electrode, the electronics and the product were designed. I worked on the global design including electrode design, the process flow, characterisation (stress and strain on the devices, impedance) and connectors. After the project we continued working with the laboratory during our free time to analyse past EMG recordings, helping with a funding application. I worked on the extraction, preprocessing and analysis with Python.

Assistive technology challenge - Helpie (grade 5.75/6)   `02/2024 - 08/2024`
Key words Assistive technology, android App, Kotlin

Helpie, an app to help mentally impaired people to travel alone. Developed in collaboration with Swiss public transport, this Android app guides step-by-step the user to travel. I was the coding leader of the app, conducted meetings with users and participated in project presentations. We have been selected and have represented EPFL on an international Hackatlon (EuroTeQ) in Paris.

IGEM - EPFL 2023 team 48C - SV Team member, Game designer (grade 6/6)   `02/2023 - 11/2023`
Key words Synthetic biology, education, game design, leadership, Godot

Development of a live biotherapeutic product to catch cadmium in the gut, avoiding bioaccumulation and contamination. I worked on the preliminary research on the biological part, on the colourimetric test for cadmium and on the safety of handling such a dangerous product. I also worked on scaling the biology to a product and on regulation. We additionally created an educational video game introducing synthetic biology, where I was one of the coding leader, and set up an IGEM-like competition for pre-university students.

Bachelor project - Laboratory of Topology and Neurosciences - EPFL (grade 5.75/6)

Key words Topology, applied mathematics, python

Topological data analysis methods can be applied to biological data such as single-cell RNA velocity. I explored how the current RNA velocity embedding algorithm works, studied the influence of parameters in UMAP and learnable UMAP on the resulting embedding and provided a way to quantify the accuracy of the methods.

Work experience

Animator for a mathematics course
EPFL- MATHeureuses
Key words Education, mathematics, gender inequality

2024

MATHeureuse give the opportunity to young women to delve deep into mathematics, aiming to reduce gender inequality in scientific domains. It consists of weekend courses with a lot of challenges and games. I was one of the animators working with 2 groups of girls around 15. We present the course, supervise exercises and exchanges about our curriculum and passion.

Teaching assistant
EPFL
Key words Education, mathematics, university

2021 - 2024

Teaching assistants are past students with strong academic result that helps new students understand the course and practice exercises. They can additionally assist the professor in organizing the course.

- **Game Design and Prototyping** I assisted the professor in the first year of the course by conducting help sessions for students, collecting resources, and providing programming support. I was also involved in the development of the structure of the course.

- **Mathematics teaching assistant** I have conducted exercise sessions for 4 different courses over the years: Analysis, linear algebra and 2 first-year mathematics courses for university students.

Associative projects and responsibilities

Class representative
SV Department EPFL
Key words Representation, university

09/2021 - 09/2022

I represented students from my degree program, participated in student representative meetings, and helped organize a conference day to assist students in envisioning their future paths.

Co-Team leader recovery ECHO, Space Race project
EPFL rocket team - EPFL association
Key words prototyping, leadership

09/2020 - 08/2021

Construct an engineer rocket in one year, with a novice bachelor students team. I managed the recovery team (around 10 students), including parachute, electronic, and ejection systems. I designed the 2-parachute system (materials, size, shape), made them, and tested them. The launch was a success for the recovery team.

Communication manager
SV industry - EPFL association
Key words communication, organisation, university

09/2020 - 08/2021

SV industry aims to link the industry world and EPFL SV students. I promoted the association activity by creating and managing social networks (Instagram ect). I promoted the associations with posters and logos and designed the comity hoodies. Additionally, I conducted interviews with industry professionals to create articles available for the students.

23rd September 2024   Jade Therras