

# Robin Duvoisin

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23 years old

## STRENGTHS

- Bachelor Project in Neural Control of Movement Lab
- ETHZ Exchange Student
- Interdisciplinary Background



## EDUCATION

- 2021-2022 **ETHZ Exchange** Student Bachelor, Health Sciences and Technology, **Average grade 5.47**
- 2019-2021 EPFL Bachelor, Life Sciences Engineering, Average grade 4.84
- 2017-2019 Gymnasium Auguste Piccard in Lausanne, award in Biology and in Chemistry
- 2016-2017 Gymnasium Exchange Student in Albert-schweizer Schule in Germany

## PROFESSIONAL EXPERIENCE

- 2022 **Research Assistant Internship in Birdsong Group** at the Institute of Neuroinformatics in Zürich  
Supervised by Prof. Hahnloser and Corinna Lorenz, 3 months

I had the opportunity to conduct an analysis of neuroelectrophysiological data recorded in songbirds. I applied my computing skills to create an exploratory GUI using Matlab. The goal was to observe local field potentials (LFPs) and spiking activity. I was able to prove that the dynamics of signals from two different brain areas responsible for the generation of song diversity tend to synchronize during sleep stages. I also applied a similar analysis on a bird performing a pitch-learning task to search for the presence of phase-lock LFP signals, which indicate signs of learning. This project allowed me to improve my skills in signal processing and big data analysis, as well as offering me a solid introduction to spiking activity and communication between populations of neurons. I will be credited as a co-author on a future publication from my supervisors.

- 2020-2021 Mentor for first-year students

Organized exercise sessions and provided advice and mental support for ten incoming students.

## PROJECT

- **Bachelor project, 10 credits, grade 6**

Neural Control of Movement Lab ETHZ, supervised by Dr. Lustenberger and Manuel C. Dominguez

My project, which was part of the research for the *Sleeploop* program from UZH and ETH, was divided into two parts. In the first part, I designed a protocol for an experiment to evaluate the effect of pre-sleep arousal level on memory consolidation using tools such as pupillometry and EEG. The second part included the processing of EEG data from a finger-tapping task using Matlab. I analyzed the dynamics of the spectral power and correlated them with signs of neuronal fatigue.

## SKILLS

- Programming
  - Matlab
  - Python
  - C++
- Autonomous learning
  - *ML*
- Languages
  - French
  - English
  - German

Chronux, EEGLab, Signal System (Bachelor project + internship)  
Signal System, Mathematical Optimization, Numerical Analysis  
Genomic simulation, Population Dynamic simulation  
Supervised Learning, Classification  
Native  
Fluent C1  
Advanced B2-C1

## HOBBIES

- Handwork project
- *Student Project House*
- Sports

Woodcraft (jewelry)  
3D print, Arduino  
Basketball & ski tours