

# João Henrique Campagnolo

Biomedical Engineering | Neuroscience | Quantitative Behavior & Data Analysis

## CONTACT

Copenhagen, Denmark  
+45 93 94 09 23  
jhc2309@gmail.com  
joaocampagnolo.com  
github.com/JoaoCampagnolo

## CORE STRENGTHS

Behavioral phenotyping  
Whole-brain activity mapping  
Assay design & validation  
Python analysis pipelines  
Statistical & network modeling

## TECHNICAL SKILLS

### Programming

Python, R, MATLAB  
Git, GitHub

### Data & Analysis

Classification & dimensionality reduction  
Bootstrap and permutation testing  
Functional connectivity & graph metrics  
Transformer-based NLP (BERT, BioBERT)

### Experimental

Larval zebrafish behavioral assays  
pERK/tERK immunohistochemistry  
Confocal & light-sheet imaging  
Atlas registration & region-level quantification

## CERTIFICATION

FELASA-accredited laboratory animal science licence

## LANGUAGES

Portuguese (native)  
French (native)  
English (fluent)  
Spanish (fluent)  
Danish (conversational)

## INTERESTS

Tennis and football  
Cinema and visual storytelling  
Independent coding projects

I'm a neuroscientist and biomedical engineer with experience turning behavioral and imaging experiments into reproducible analysis pipelines. My PhD work combined assay design, brain-wide activity mapping, multivariate statistics, and network modeling to study stress resilience in larval zebrafish. I am interested in research and data-driven R&D roles that require clear, decision-ready analysis of complex biological data.

## EXPERIENCE

**PhD Researcher in Neuroscience** 2022 – 2026  
University of Copenhagen, Denmark

- Developed and validated a larval zebrafish stress assay and resilience score based on locomotor recovery after acute stress.
- Built reproducible Python workflows for behavioral feature extraction, atlas-based brain analysis, multivariate modeling, and connectivity analysis.
- Combined experimental, imaging, and computational work to identify neural signatures of inter-individual stress recovery.

**External Research Stay – Machine Learning & Network Analysis** 2025  
UiT The Arctic University of Norway, Tromsø

- Evaluated graph-based representations of large-scale neural activity data, with emphasis on stability, interpretability, and downstream analysis.

**Data Scientist / Developer** 2020 – 2022  
Nevaro, Lisbon, Portugal

- Analyzed EEG data collected in VR environments to characterize mental states and support digital mental health applications.

**Master's Thesis Researcher** 2018 – 2019  
EPFL (Ramdya Lab), Lausanne, Switzerland

- Developed unsupervised methods for 3D pose-based analysis of *Drosophila melanogaster* behavior; contributed to the DeepFly3D project published in *eLife*.

## EDUCATION

**PhD in Neuroscience** 2022 – 2026  
University of Copenhagen, Denmark

**Integrated Master's in Biomedical Engineering and Biophysics** 2014 – 2020  
University of Lisbon, Portugal  
Academic Merit Award (*Prémio de Mérito Académico*) for highest grade record in Years 1 & 2.

## TEACHING

**Teaching Assistant – Computational Neuroscience** 2024 – 2026  
University of Copenhagen

- Taught learning principles and neural network basics, and supported practical sessions for MSc students in medicine and neuroscience.

## SELECTED RESEARCH OUTPUT

Günel S, Rhodin H, Morales D, **Campagnolo JH**, Ramdya P, Fua P. *DeepFly3D, a deep learning-based approach for 3D limb and appendage tracking in tethered, adult Drosophila*. *eLife*, 2019.

**Campagnolo JH**, Ahmad E, Selvan R, Kermen F. *Quantifying Stress Resilience as Locomotor Rebound in Larval Zebrafish*. Manuscript in preparation.

**Campagnolo JH**, Rigola LP, Korn JL, Selvan R, Kermen F. *Neural correlates of interindividual variability in rebound from acute stress in the zebrafish*. Manuscript in preparation.