

CURRICULUM VITAE

Research experience

1 OCT 2018 - NOW > **THESIS** > *DANIEL SHULZ'S TEAM – CO DIR. ISABELLE FEREZOU – NEUROPSI – GIF SUR YVETTE*

- > Study of cortical dynamics on freely behaving murine models, during either discrimination or locomotion tasks.
- > This involved the realization of multiple electro-mechanical devices to facilitate behavior during fiberoptic imaging, like an optical rotative joint, automated behavioral setup and custom implants. On the other hand, it required the development of pipelines and algorithms for analysis of heavy datasets both for behavior and fluorescence videos, which are currently in process.

> 2020 > **PATENT SUBMISSION** > *CNRS*

Functional prototype of lockable optical rotary joint with closed loop servo control, developed during the thesis.

28 JAN - 22 JUN 2018 > **M2 NEUROSCIENCES INTERNSHIP** > *CLEMENT LENA'S TEAM – IBENS – PARIS*

- > Study of a cerebello-thalamic pathway involved in whisker dependent fine tactile perception.
- > Creation of an experimental apparatus to record high-speed videos of freely moving mice, in order to characterize motor control in relation to whisker contacts, in two biological conditions: either with temporary chemogenetic inactivation of DN-Pom pathway, or in control condition.
- > We showed no statistical difference between both condition, reinforcing the idea that the DN-Pom pathway could play a role in sensory processing, as its inactivation suppresses the ability of mice to discriminate between textures but doesn't affect the motor adaptations of whisker during touch.

24 APR - 29 JUN 2017 > **M1 NEUROSCIENCES INTERNSHIP** > *DANIEL SHULZ TEAM – NEUROPSI – GIF SUR YVETTE*

- > Study of neuronal responses to "stick-slip" whisker events under anesthesia, in the rat cortex and the thalamus.
- > Manufacture of custom implants with 40 channels (10 tetrodes) and individual micro-drives. Chronic implantation and recording experiments as well as analysis of responses evoked by the whiskers kinematics, recorded at high frequency in video during stimuli presentation. We identified some neurons that showed tuning to "slip" events.

Training Courses

2019 > **Surgical operations on murine models** > (1 week) CNRS, Marseille

2019 > **Conception of scientific experiments & well-being of murine models** > (1 week) CNRS, Paris

2019 > **Laser cutting machines for soft materials and metals** > (Half-day) Fablab Digiscope, Plateau de Saclay

Academic formation

2016 – 2018 > **MASTER INTEGRATIVE BIOLOGY AND PHYSIOLOGY** > *UNIVERSITE PIERRE ET MARIE CURIE*

- > Overview of the principal experimental approaches in neurosciences, and introduction to systems neurosciences - 4B006, 5BN04, 5BN05

2012 – 2016 > **LICENCE LIFE SCIENCES** > *UNIVERSITE PIERRE ET MARIE CURIE*

- > Role of neuronal microcircuits in the emergence of cerebral functions. – 3v544
- > Several courses on algorithms and programming for biology. Languages: Python & C – 3v686 – Lv229 – Lv231

Skills

LANGUAGE >

French:
Mother tongue

English:
CLES B2
in 2015

SOFTWARES >

- Adobe, MS Office suites,
Windows & Linux OS.
- SOLIDWORKS, Fusion360,
Blender (3D CAD & CAM)
- CURA, Preform (Slicers for
FMD/SLA 3D printers)
- AutoCAD Eagle

PROGRAMMING >

Advanced

- Python 2 & 3
- MATLAB
- C++ & C
- MySQL
- GitHub platform

Bases

- NI LabVIEW
- R
- HTML, CSS,
JavaScript
- DOS batch
language

TECHNICAL >

- 3D printer parc maintenance
- Conception (Schematics and prototyping) as well
as manufacture (Gerber files) of electronic
systems.
- Usage of sawing machines (table saw, bandsaw)
as well as common workshop equipment.
- File server maintenance, with RAID mount