

# MOSTAFA SAFAIE

Recently-graduated Ph.D. of neuroscience, coming from an engineering background, looking for a post-doc position, interested in rodent behavior, in-vivo electrophysiology, basal ganglia, dopamine and how motor skills are developed and executed.

## EDUCATION

### Ph.D. in Neuroscience

SEP2016 — APR2020  
*Aix Marseille University,  
France*

Studying embodiment as a strategy to produce well-timed behaviors, and the contribution of the dorsal striatum to the control of embodied strategies e.g., motor sequences, using several behavioral assays, lesion experiments, and electrophysiological recordings in freely-moving rats.

### M.Sc. in Electrical/ Biomedical Engineering

SEP2013 — JUN2016  
*Ferdowsi University of  
Mashhad, Iran*

Investigating the relation between sleep spindles and slow oscillations during motivated forgetting process in humans. This work included administering behavioral tasks, EEG acquisition in sleep and wake, and signal processing.

### B.Sc. in Electrical/ Electronics Engineering

SEP2009 — SEP2013  
*Ferdowsi University of  
Mashhad, Iran*

Design and implementation of a computer network firewall using ternary content-addressable memories in FPGA development boards.

## SKILLS/EXPERIENCES

### Data Analysis

- Data acquisition, signal processing and visualization, and statistical inference using Python (and formerly, Matlab).
- Developing a complete data processing pipeline in Python using Jupyter Notebooks to incorporate behavioral, video, and electrophysiological data and generate fully reproducible publication-quality figures, e.g., 📊.
- Using relevant tools for programming and data analysis, like: OOP, Git, NumPy, and SciPy.

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## Rodent Behavior

- Designing and administering several behavioral experiments for rats.
- Performing stereotaxic surgeries to induce excitotoxic lesions in subdivisions of the dorsal striatum.
- Immunohistochemistry and lesion quantification.
- Certified for experimenting with rodent models, based on EU directives.

## Electrophysiology

- Implanting silicon probe/tetrode mounted  $\mu$ Drives for in-vivo chronic extracellular recordings in rats.
- Spike sorting using Klusta and Spyking-Circus, and manual sorting by Phy.
- Building a custom-made  $\mu$ Drive with a single screw housing 8 tetrodes using 3D printing, CNC machining and manual assembly.
- Manufacturing Thomas Recording tetrodes from raw fibers using custom manual methods.

## PUBLICATIONS

**M Safaie\***, et al: “The dorsal striatum energizes motor routines”, *Current Biology*, *in-press* 📄

**M Safaie\***, et al: “Turning the body into a clock: accurate timing is facilitated by simple stereotyped interactions with the environment”, *PNAS*, 2020 📄

F Dehnavi et al including **M Safaie**: “Opposite Effect of Motivated Forgetting on Sleep Spindles during Stage 2 and Slow Wave Sleep”, *Sleep*, 2019 📄

S Sadrabadi et al including **M Safaie**: “Motivated forgetting increases the recall time of learnt items: behavioral and event related potential evidence”, *Brain Research*, 2019 📄

## REFERENCES

- ➡ Ph.D. advisor: David Robbe  
[david.robbe@inserm.fr](mailto:david.robbe@inserm.fr)
- ➡ Ph.D. committee member: Anna Montagnini  
[anna.montagnini@univ-amu.fr](mailto:anna.montagnini@univ-amu.fr)
- ➡ M.Sc. advisor: Maryam Ghorbani  
[maryamgh@um.ac.ir](mailto:maryamgh@um.ac.ir)