Bartul Mimica

website | https://bartulem.github.io
e-mail | bmimica@princeton.edu

EDUCATION

NTNU
PhD in Neuroscience
2014-2019 | Trondheim, NO

UNIZG
BSc/MSc in Psychology
2006-2012 | Zagreb, HR
GPA: 4.6 / 5.00

SKILLS

COMPUTER
Python (proficient), Git, C++, LaTex, Jython, Javascript/HTML/CSS (basic)

LABORATORY
Electrophysiology, optogenetics, immunohistochemistry, optical/IMU tracking of rodent behavior

PUBLICATIONS

Mimica B, Dunn AB, Tombaz, T, Bojja VPTNCS, Whitlock RJ (2018). Efficient cortical coding of 3D posture in freely moving rats. Science 362, 584-589.

Tombaz, T., Dunn BA, Hovde K, Cubero RJ, **Mimica B**, Mamidanna P, Roudi Y, Whitlock JR. (2020). Action representation in the mouse parieto-frontal network. Scientific Reports 10 (5559), 1-14.

OUTREACH

SUMMER SCHOOLS
CSHL Neural Data Science 2019
UiO Und Measure in Neurosci 2015

INVITED TALKS
Croatian Students Summit 2020
Harvard Medical School 2019
Princeton Neuroscience Institute 2019
Croatian Institute for Brain Res 2018

CONFERENCE PROCEEDINGS
Cosyne 2018
FENS 2018
SfN 2018 & 2016
Nordic Neuroscience 2017

GRANTS & AWARDS
HHMI grant 2019
NRSN grant 2019
New Attendees Travel Grant 2018
UNIZG Rector's Award 2011

SUMMARY

I am a postdoctoral researcher in neuroscience, versed in methodology, e-phys data acquisition and analysis tools, tirelessly working on expanding my skill set to become a well rounded scientist. I'm passionate about operationalizing research problems, data science, machine learning and programming, but also public outreach and disseminating knowledge. I am happy to deviate from my academic roots to explore solutions to diverse problems, such that I developed a strong interest in analyzing and visualizing sport science data, a nous I hope to refine further in the coming years.

RESEARCH EXPERIENCE

PRINCETON NEUROSCIENCE INSTITUTE | PD Research Associate
2021 – | Princeton, USA

KAVLI INSTITUTE/NTNU | Researcher
2020 – 2021 | Trondheim, Norway

Overview Type and extent of behavioral modulation across the rodent neocortex. Extracting features from motion capture videos (OptiTrack; marker-based animal tracking) and inertial measurement units (BNO055 Bosch) and relating them to the recorded neuronal activity (Neuropixels/1-p miniscopes).
Responsibilities Animal training/care, probe assembly and implantation surgeries (Neuropixels), data acquisition (SpikeGLX, Motive, CoolTerm, ...), data analyses and visualizations (Python).
Accomplishments Setting up protocols and assembling set-ups for data collection (NI PXI Chassis, OptiTrack, Bosch BNO055, Teensy), creating a semi-automated data processing pipeline (C++, Python, JuypterLab) for the acquired data, developed an *ad* hoc method for reconstructing probe tracks (DiI staining, 3D rendering of MR scans in Mango).

KAVLI INSTITUTE/NTNU | PhD candidate
2014 – 2019 | Trondheim, Norway

Overview Neural coding of behavior in the rodent associative cortices.
Responsibilities Dynamical foraging task training, tetrode drive/probe assembly and implantation surgeries (NeuroNexus), data acquisition (Neuralynx, Motive, ...), tissue processing (Cresyl violet, GFP staining), data analyses and visualizations (Python, Jython, Matlab).
Accomplishments Two peer-reviewed publications, four invited talks, five conference proceedings, three travel grants, and two summer school attendances.

UNIVERSITY OF ZAGREB | Student Intern
2010 – 2012 | Zagreb, Croatia

Overview Social/differential psychology projects including studying the determinants of moral judgements, heritability of personality traits, the relationship between the five factor model and musical preferences, and the learning mechanism underlying the mere exposure effect.
Responsibilities Study design, literature search and data processing, questionnaire construction and application, visual task programming, data collection and analyses (SPSS), manuscript writing.
Accomplishments Work resulted in articles/books: (A) Heritability of personality Psych Bulletin (2015), (B) Personality and musical preferences: XX. Summer School of Psychology (2011), (C) Rector's Award for an outstanding student research project (2011).