MIGUEL FERNANDES, PHD

SCIENTIST WITH THE GOAL TO EMPOWER PEOPLE THROUGH KNOWLEDGE

António Miguel Fernandes
Born in 1985 in Porto, Portugal

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SKILLS

Python (>5 years)

Machine learning

Molecular biology

Neuroscience

Life Sciences

COMPETENCIES

Problem solving

Communication

Presentation

Teamwork

Adaptability

I am an experienced molecular biologist and neuroscientist fascinated by the analysis of data using ***machine learning*** *methods* to extract ***valuable insights*** and ***create knowledge***.

PROFESSIONAL EXPERIENCE

NEUROSCIENTIST 2013-PRESENT

Postdoctoral Scientist (Department Genes – Circuits – Behavior)

Max Planck of Neurobiology, Martinsried, Germany

-Employing diverse ***Machine Learning algorithms*** to unstructured data (time-series analysis: behavioral and imaging data. ***Python***: Pandas, Scikit-learn, Numpy, Seaborn, Matplotlib, Scikit-image).

-Modeling and analysis of diverse data. ***Supervised and unsupervised learning*** (e.g. linear regression, K-means, and hierarchical clustering). Python

-Performing high-resolution behavioral tracking. ***Computer Vision***. Python and OpenCV

-Registration of biological data. Computational Morphometry Toolkit (CMTK), Advanced Normalization Tools (ANTs), BASH (Shell) and Image J Macro language.

-Imaging of neuronal activity combined with Holographic optogenetic stimulation (2P Microscopy).

POSTDOC ASSOCIATION 2014 – PRESENT

Representative

The postdoctoral association represents all postdoctoral fellows of the Max Planck of Neurobiology. Organized scientific and social events.

PHD IN NEUROSCIENCE 2009-2013

-Performed Confocal imaging of *in vivo* and *in vitro* brain samples.

-Developed ***molecular and genetic tools*** for neural circuit dissection (large genomic and RNA data analysis, DNA/RNA handling, PCR and molecular cloning).

-Constructed behavioral setups and analyzed ***time-series data***.

-Performed Immunohistochemistry and Fluorescent *in situ* Hybridization techniques

Hans-Grisebach Award: Outstanding PhD dissertation in the field of biochemistry and molecular biology.

LANGUAGES

English and German (fluent)
Portuguese (native)
French (basic)

ACADEMIC EDUCATION

PHD IN NEUROSCIENCE 2009-2013

University of Freiburg, Germany

LICENTIATE IN BIOLOGY (EQUIVALENT TO MASTER'S DEGREE) 2003-2009

University of Porto, Portugal

SELECTED COURSES

Machine Learning with Python - Coursera

Databases and SQL for Data Science - Coursera

KEY PUBLICATIONS

Mearns et al. Current Biology, 2020 (Co-author) / Fernandes et al. bioRxiv, 2019 (Lead author) / Kunst et al. Neuron, 2019 (Co-author) / Förster et al. Scientific Reports, 2017 (Co-author) / Fernandes et al. PLoS ONE, 2013 (Lead author) / Fernandes et al. Current Biology, 2012 (Lead author)

PRESENTATIONS

Talks

Champalimaud Research Symposium, Lisbon, Portugal 25 October 2018

FENS Satellite Symposium, Berlin 6 July 2018

SPP1926 Annual Meeting, Naurod 10 October 2017

DFG-Forschergruppe 1279 Meeting, Chorin 30 March 2016

Conferences (with poster presentation)

SFB 870 Retreat, Munich 11 December 2018

11th FENS Meeting, Berlin 10 July 2018

MAPS Conference, Strasbourg 9 December 2015

10th International Conference on Zebrafish, Bethesda, USA 22 June 2012

1st Champalimaud Neuroscience Symposium, Lisbon, Portugal 19 September 2011

TEACHING

Zebrafish course, TUM PhD program 'Life Science and Technology' May 2019

Molecular Neurobiology course (GSN-LMU University) June 2018

Molecular Neurobiology course (GSN-LMU University) July 2017

Workshop Instructor (TUM University) 20 January 2015

INTERNATIONAL EXPERIENCE

Visiting researcher: National Institute of Genetics, Japan, May 2014. NIG Collaboration Grant-NIG-JOINT (2014-A).

Visiting Researcher: Unit on Behavioral Neurogenetics, NICHD, USA, Jan 2011 – Feb 201

HOBBIES AND VOLUNTEER EXPERIENCE

Football, martial arts, biking, cooking and reading.

Collaborator: Open Neuroscience. Network promoting open source tools for Neuroscience (www.open-neuroscience.com)