





Ana Luísa Pinho


BrainsCAN Postdoctoral Fellow

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About Me

I am a Neuroscientist with a background in Engineering Physics. My research focuses on the application of functional Magnetic Resonance Imaging (fMRI), computational and statistical techniques—including machine learning—to map neurocognitive mechanisms in the human brain.

Expertise

-  Plan&Organize Multistep Projects
-  Analysis of High-Dimensional Data
-  Scientific Writing


Languages


 Portuguese 
 English 
 French 

Social Network

 @alpinho
 @ALuisaPinho@fediscience.org
 @ALuisaPinho
 linkedin.com/in/analuisapinho

Memberships

 Member of the Organization for Human Brain Mapping

 Member of the Portuguese Society for Neuroscience

Professional Experience

2021 – Present **Tier I BrainsCAN Postdoctoral Fellow** Western University, CA

- Functional mapping of the cortico-striatal-cerebellar circuitry involved in the cognitive ability of forming temporal predictions during rhythmic and non-rhythmic sequences of events.
- Development of individualized encoding models (that better account for inter-subject variability) to improve functional specificity in neuroimaging of the cognitive mapping of elementary components associated with human behaviour.

2015 – 2020 **Postdoctoral Researcher** Parietal Team – Inria Saclay, FR

- Development of the Individual Brain Charting (IBC) dataset, an open-access, multi-task fMRI-data initiative.
- Development of an individual-functional-atlasing approach to link functional segregation of specialized brain regions to elementary mental functions, by leveraging the IBC dataset.

Education

Postgraduate

2009 – 2015 **PhD Biomedical Sciences** Karolinska Institutet, SE and University of Coimbra, PT
Thesis: *Inside of the Creative Mind: Unravelling the Neurocognitive Mechanisms of Musical Creativity*

Undergraduate

1999 – 2008 **MSc + Licentiate Degrees Engineering Physics** Instituto Superior Técnico – ULisboa, PT
Thesis: *Probabilistic non-linear earthquake location in a 3-D velocity model*

Fellowships, Grants & Awards

2021 – Present **BrainsCAN Postdoc. Fellowship** Canada First Research Excellence Fund, CA
Amount (3y): **225K CAD**

2013 – 2014 **Research Fellowship** Sven and Dagmar Saléns Foundation, SE
Amount: **~144K SEK**

2013 Prize of **The Best Poster Communication** Rectory of NOVA ULisboa, PT
Symposium “Music, Poetry & The Brain - Celebrating Wagner’s Bicentennial”

2009 – 2013 **PhD Studentship** Foundation for Science and Technology, PT
SFRH/BD/33895/2009
Amount: **~80K €**

2006 – 2007 **Scientific Initiation Grant** Foundation for Science and Technology, PT
Seismology
Amount: **~3.600 €**

Ad Hoc Reviewer

Journals Cerebral Cortex, NeuroImage, Scientific Data, Scientific Reports, Brain Structure and Function, Brain Imaging and Behavior, Frontiers in Psychology and PeerJ Computer Science

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Computer Skills —

Programming

Python (venv, pytest, Joblib), Bash, C, SQL, Lisp, Assembly (Harvard Architecture)

Scientific Computing

IPython, NumPy, SciPy, pingouin, MATLAB, GNU Octave, Jupyter Notebook, R, Wolfram Mathematica

Machine-Learning Frameworks

scikit-learn, PyTorch, Google AI&ML Transformers

Data Manipulation&Visualization

pandas, Matplotlib, Seaborn

Typesetting

L^AT_EX (Document Classes: article, beamer, book and letter)

Software for Neuroimaging

Nilearn, NiBabel, SPM, FSL, FreeSurfer, Papaya, Connectome Workbench, MRICron, MRICroGL, BrainVoyager

Software for Psychophysics

Expyriment, pliers, Psychtoolbox, E-Prime&E-Basic, PsychoPy, Presentation

Software Engineering

Git protocol (Platforms: GitHub and GitLab), Conda

Web/Databases

HTML&CSS, Django

Miscellaneous

GNU Emacs, gnuplot, Visual Studio Code, Office productivity softwares, GIMP, Inkscape, darktable, Unison File Synchronizer, VeraCrypt, FFmpeg, Kdenlive, Statistica

Selected Publications

- 2023 **Individual Brain Charting third release, probing brain activity during Movie Watching and Retinotopic Mapping**
Ana Luísa Pinho et al.
preprint in HAL. Journal article under review.
- 2023 **Should one go for individual or group-level brain parcellations? A deep-phenotyping benchmark.**
Bertrand Thirion, Himanshu Aggarwal, Ana Fernanda Ponce, Ana Luísa Pinho, and Alexis Thuat
Brain Struct Funct. Online ahead of print.
- 2021 **From deep brain phenotyping to functional atlasing.**
Bertrand Thirion, Alexis Thuat, and Ana Luísa Pinho
Curr Opin Behav Sci. 40:201-202
- 2021 **Subject-specific segregation of functional territories based on deep phenotyping**
Ana Luísa Pinho et al.
Hum Brain Mapp. 42(4):841– 870
- 2020 **Individual Brain Charting dataset extension, second release of high-resolution fMRI data for cognitive mapping.**
Ana Luísa Pinho et al.
Sci Data. 7(1):353
- 2018 **Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping**
Ana Luísa Pinho et al.
Sci Data. 5:180105

Selected Dataset Publications

- 2021 **Individual Brain Charting (IBC)**
Ana Luísa Pinho et al.
EBRAINS, v3.0
- 2020 **Individual Brain Charting dataset extension, second release of high-resolution fMRI data for cognitive mapping**
Ana Luísa Pinho et al.
NeuroVault. id collection=6618

Selected Software Contributions

- 2021 – Present Contributor to **WiNRepo**: “Women in Neuroscience Repository”
- 2017 – Present Contributor to **Nilearn**: Stats&ML for NeuroImaging in Python
- 2015 – Present Contributor to **Public Analysis Code for the IBC Project**
- 2015 – 2020 Contributor to **Public Protocols for the IBC Project**

Selected Talks

- 2023 **Deep behavioral phenotyping in functional MRI for cognitive mapping of the human brain**
Seminar at the MNI Feindel Brain and Mind Lecture Series, BIC and MNI, McGill University, Montreal, Canada
- 2020 **Segregation of functional territories in individual brains**
Oral presentation in Session Modeling and Analysis: Variability in Brain Activation, OHBM Annual (Virtual) Meeting
- 2020 **Individual Brain Charting dataset extension: second and third releases**
Open Science Room, OHBM Annual (Virtual) Meeting
- 2019 **Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human brain**
The 5th CiNet Conference, Osaka, Japan

Advocacy

- Gender Equity Board member of the *Women in Neuroscience Repository* (WiNRepo)

March 24, 2024

Ana Luísa Pinho