





# 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](https://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, Google AI&ML Transformers

### Data Manipulation&Visualization

pandas, Matplotlib, Seaborn

### Typesetting

L<sup>A</sup>T<sub>E</sub>X (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 (by StatSoft and TIBCO Software)

## 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 submitted.
- 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 5<sup>th</sup> CiNet Conference, Osaka, Japan

## Advocacy

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

January 2, 2024

Ana Luísa Pinho