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
- in linkedin.com/in/analuisapinho

Memberships ———

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** Amount (5y): **375K CAD**	Canada First Research Excellence Fund, CA
2013 – 2014	**Research Fellowship** Amount: ∼**144K SEK**	Sven and Dagmar Saléns Foundation, SE
2013	Prize of **The Best Poster Communication** Symposium "Music, Poetry & The Brain - Celebrating Wagner's Bicentennial"	Rectory of NOVA ULisboa, PT
2009 – 2013	**PhD Studentship** **SFRH/BD/33895/2009** Amount: ∼**80K €**	Foundation for Science and Technology, PT
2006 – 2007	**Scientific Initiation Grant** **Seismology** Amount: ∼**3.600 €**	Foundation for Science and Technology, PT

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 Arquitecture)

⚛ 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 Maniputation&Visualization

pandas, Matplotlib, Seaborn

A Typesetting

LaTeX(Document Classes: article, beamer, book and letter)

🧠 Software for Neuroimaging

Nilearn, NiBabel, SPM, FSL, FreeSurfer, Papaya, Connectome Workbench, MRIcron, MRIcroGL, BrainVoyager

♣ Software for Psychophysics

Expryment, 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

2024   **Individual Brain Charting third release, probing brain activity during Movie Watching and Retinotopic Mapping.**
Ana Luísa Pinho et al.
Sci Data. 11(1):590

2024   **Should one go for individual or group-level brain parcellations? A deep-phenotyping benchmark.**
Bertrand Thirion, Himanshu Aggarwal, Ana Fernanda Ponce, <u>Ana Luísa Pinho</u>, and Alexis Thual
Brain Struct Funct. 229(1):161-181

2021   **From deep brain phenotyping to functional atlasing.**
Bertrand Thirion, Alexis Thual, and <u>Ana Luísa Pinho</u>
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   Contributer to **WiNRepo**: "Women in Neuroscience Repository"
2017 – Present   Contributer to **Nilearn**: Stats&ML for NeuroImaging in Python
2015 – Present   Contributer to **Public Analysis Code for the IBC Project**
2015 – 2020   Contributer 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)

July 17, 2024   **Ana Luísa Pinho**