Ana Luísa Pinho

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MASTODON: @ALuisaPinho@fediscience.org

TWITTER: @ALuisaPinho

LINKEDIN: linkedin.com/in/analuisapinho

RESEARCHGATE: https://www.researchgate.net/profile/Ana-Pinho-25 Academia.edu: https://uwontario.academia.edu/AnaLuisaPinho

Research Interests

Cognitive&Systems Neuroscience and Music Cognition

- Development of deep-behavioral-phenotyping strategies, namely data-driven approaches in large task-fMRI datasets, to inspect cognitive components of the phenotype and their network consistency/variability across individuals
- Investigation of high-order neurocognitive mechanisms involved in both musical performance and perception

Neuroimaging

• Focus in Functional Magnetic Resonance Imaging (fMRI)

Functional Brain Atlasing

- Development of encoding models, leveraging machine-learning techniques, to perform functional mapping of cognition in the human brain
- Development of a common framework of psycho-physiological constructs

Data Science and Neuroinformatics

- Development of big-data and data-sharing frameworks to facilitate mega-analyses and reproducibility in systems neuroscience and neuroimaging.
- Revision of large-scale cognitive ontologies

Current position

^{2021 -} Present Tier I *BrainsCAN Postdoctoral Fellow*, University of Western Ontario, London ON, Canada Faculty Advisors: Jörn Diedrichsen and Jessica Grahn

Appointments held

2015 – 2020 Postdoctoral Researcher, Parietal Team, Inria Saclay–Île-de-France, Paris-Saclay University, France Advisor: Bertrand Thirion

Education

₂₀₀₉ – ₂₀₁₅ PHD in Health Sciences (branch: Biomedical Sciences)

<u>Institutions</u>: Faculty of Medicine of the University of Coimbra (Coimbra, Portugal) and

Karolinska Institutet (Stockholm, Sweden)

<u>Thesis title</u>: Inside of the Creative Mind: Unravelling the Neurocognitive Mechanisms of Musical

Creativity (http://hdl.handle.net/10316/27005)

Faculty Advisors: Fredrik Ullén, Örjan de Manzano, Peter Fransson, Miguel Castelo-Branco

1999 - 2008 MSc + LICENTIATE DEGREES (Integrated Master) in Engineering Physics

<u>Institution</u>: Instituto Superior Técnico, University of Lisbon (Lisbon, Portugal)

 $\underline{\textbf{Thesis Title}} : \textit{Probabilistic non-linear earthquake location in a 3-D velocity model}$

(https://fenix.tecnico.ulisboa.pt/cursos/meft/dissertacao/2353642196027)

Faculty Advisor: João Fonseca

Fellowships, Grants & Awards

2021 - Present Tier I Brains CAN Postdoctoral Fellowship, Canada First Research Excellence Fund (CFREF), Canada

Amount (3y): 225.000 CAD

2013 - 2014 Research Fellowship, Sven and Dagmar Saléns Foundation (Stockholm, Sweden)

Amount: **~144.000 SEK**

Prize of *The Best Poster Communication* in the Symposium "Music, Poetry & The Brain - Celebrating

Wagner's Bicentennial", Rectory of NOVA University Lisbon (Lisbon, Portugal)

PhD Studentship from Foundation for Science and Technology (FCT) (SFRH/BD/33895/2009) un-

der the PHD Programme in Experimental Biology and Biomedicine of Center for Neuroscience and

Cell Biology, University of Coimbra (Coimbra, Portugal)

Amount: ~80.153 €

2006 - 2007 Scientific Initiation Grant in Seismology from FCT, Instituto Superior Técnico (Lisbon, Portugal)

Amount: ~3.600 €

Research

RESEARCH EXPERIENCE

- 2021 Present
 - Postdoctoral Fellow: (1) application of brain-atlasing techniques and musical tasks to chart the cortico-basal ganglia-cerebellar circuitry involved in the cognitive ability of forming temporal predictions during rhythmic and non-rhythmic sequences of events; (2) development of individualized encoding models suitable to be used in an ensemble of fMRI datasets, wherein individual parcellations on functional maps of the human brain can be extracted by systematically account for inter-subject variability through integration of group-level parcels with individual data and using a hierarchical Bayesian parcellation scheme.
- Postdoctoral Researcher: (1) development of a multimodal neuroimaging dataset for large-scale 2015 - 2020 functional atlasing and cognitive mapping of the human brain; (2) application of mega-analytic encoding models to fMRI data for brain atlasing, namely for the improvement of functional specificity in neuroimaging relative to elementary cognitive components that modulate behavior.
- Graduate Researcher: investigation of the neural correlates of musical creativity, using fMRI as 2010 - 2014 neuroimaging technique and musical improvisation as model behavior.
- Undergraduate Research Assistant: process and analysis of seismic data and maintenance of the 2005 - 2006 IST seismic stations.

Main Scientific Projects

- NeuroCausal / Main Investigators: Valentina Borghesani, Sladjana Lukic, Pedro Pinheiro-Chagas, 2022 - present Isil Bilgin
- BrainsCAN Postdoctoral-Fellowship Project: Novel brain atlasing techniques to reveal the cerebellar 2021 – Present role in music cognition / Main Investigator: Ana Luísa Pinho (with supervision from Faculty Advisors)
- Canadian Institutes Health Research (CIHR) Project: Mapping the Human Cerebellum / Principal - Present Investigator: Jörn Diedrichsen
- WHATNET / Principal Investigators: Lucina Uddin, Nathan Spreng, Thomas Yeo 2020 - present
- Individual Brain Charting (IBC): SP2 Human Brain Organization Work Package 2.1 "Multimodal 2015 - 2020 whole mapping" of the Human Brain Project (HBP) / Principal Investigator: Bertrand Thirion
- Kartläggning av hjärnområden involverade i hierarkisk kontroll av långa motoriska sekvenser hos musiker och icke-musicker ("Mapping of brain areas involved in the hierarchical control of long motor sequences of musicians and non-musicians") - Swedish Research Council (Grant: 521-2010-3195) / Principal Investigator: Fredrik Ullén

News&Views

- (preprint) **Pinho, A. L.**, Richard, H., Eickenberg, M., Amadon, A., Dohmatob, E., Denghien, I., Torre, J. J., Shankar, S., Aggarwala, H., Ponce, A. F., Thual, A., Chapalain, T., Ginisty, C., Becuwe-Desmidt, S., Roger, S., Lecomte, Y., Berland, V., Laurier, L., Joly-Testault, V., Médiouni-Cloarec, G., Doublé, C., Martins, B., Varoquaux, G., Dehaene, S., Hertz-Pannier, L., & Thirion, B. Individual Brain Charting third release, probing brain activity during Movie Watching and Retinotopic Mapping (journal article submitted.) HAL Id: hal-04272993, version 1
- Kong, R., Uddin, L. Q., Betzel, R., Cohen, J. R., Damoiseaux, J. S., De Brigard, F., Eickhoff, S. B., Fornito, A., Gratton, C., Holmes, A., Laird, A. R., Larson-Prior, L., Nickerson, L. D., **Pinho, A. L.**, Razi, A., Sadaghiani, S., Yendiki, A., Yeo, B. T. T., Spreng, R. N. Consensus, convergence, and correspondence among functional brain network atlases. (*journal article under review*)
- Bilgin, I. P., Paugam, F., Huang, R., **Pinho, A. L.**, Zhou, Y., Lukic, S., Pinheiro-Chagas, P., Borghesani, V. NeuroCausal: Development of an Open Source Platform for the Storage, Sharing, Synthesis, and Meta-Analysis of Neuropsychological Data. (*proceedings article under review.*)
- (preprint) Zhi, D., Shahshahani, L., Nettekoven, C., **Pinho, A. L.**, Bzdok, D., & Diedrichsen, J. A hierarchical Bayesian brain parcellation framework for fusion of functional imaging datasets. (journal article to be submitted soon.) doi: 10.1101/2023.05.24.542121
- Nettekoven, C., Zhi, D., Shahshahani, L., **Pinho, A. L.**, Saadon-Grosman, & Diedrichsen, J. A hierarchical atlas of functional regions in the cerebellum. (*journal article to be submitted soon.*) doi: 10.1101/2023.09.14.557689
- Aggarwal, H., Ponce, A. F., Shankar, S., Torre, J. J., Thual, A., **Pinho, A. L.**, Ginisty, C., Lecomte, Y., Berland, V., Beriot, L., Laurier, L., Joly-Testault, V., Médiouni-Cloarec, G., Hertz-Pannier, L., Doublé, C., Martins, B., Dehaene, S., Wolbers, T., Shafto, M. A., Dolan, R. J., Schonberg, T., Poldrack, R. A., Grill-Spector, K., Lee, A. C. H., Potkin, S. G., Chang, D. H. F., Astle, D. E., & Thirion, B. Individual Brain Charting dataset extension, fifth release of high-resolution fMRI data for cognitive mapping. (journal article in preparation.)

Publications

JOURNAL ARTICLES

- Thirion, B., Aggarwal, H., Ponce, A. F., **Pinho, A. L.**, & Thual A. Should one go for individual or group-level brain parcellations? A deep-phenotyping benchmark. Brain Structure and Function. doi: 10.1007/s00429-023-02723-x
- Uddin, L. Q., Betzel, R. F., Cohen, J. R., Damoiseaux, J. S., De Brigard, F., Eickoff, S. B., Fornito, A., Gratton, C., Gordon, E. V., Laird, A., Larson-Prior, L. J., McIntosh, A. R., Nickerson, L. D., **Pinho, A. L.**, Poldrack, R., Razi, A., Sadaghiani, S., Shine, J. M., Yendiki, A., Yeo, B. T. T., Spreng, R. N. Controversies and progress on standardization of large-scale brain network nomenclature. (*Network Neuroscience*). doi: 10.1162/netn_a_00323
- Levitis, E., Gould van Praag, C. D., Gau, R., Heunis, S., DuPre, E., (...), **Pinho, A. L.**, (...), Maumet, C. Centering inclusivity in the design of online conferences—An OHBM-Open Science perspective. *GigaScience*; 10(8):giabo51. doi: 10.1093/gigascience/giabo51

- Thirion, B., Thual, A., & **Pinho, A. L.** From deep brain phenotyping to functional atlasing. *Current Opinion in Behavioral Sciences*; 40:201-202 doi: 10.1016/j.cobeha.2021.05.004
- Dohmatob, E., Richard, H., **Pinho, A. L.**, & Thirion, B. Brain topography beyond parcellations: local gradients of functional maps. *NeuroImage*; 229:117706. doi: 10.1016/j.neuroimage.2020.117706
- Pinho, A. L., Amadon, A., Fabre, M., Dohmatob, E., Denghien, I., Torre, J. J., Ginisty, C., Becuwe-Desmidt, S., Roger, S., Laurier, L., Joly-Testault, V., Médiouni-Cloarec, G., Doublé C., Martins, B., Pinel, P., Eger, E., Varoquaux, G., Pallier, C., Dehaene, S., Hertz-Pannier, L., & Thirion, B. Subject-specific segregation of functional territories based on deep phenotyping. *Human Brain Mapping*; 42(4): 841–870. doi: 10.1002/hbm.25189
- Pinho, A. L., Amadon, A., Ruest, T., Fabre, M., Gauthier, B., Clairis, N., Knops, A., Genon, S., Dohmatob, E., Denghien, I., Torre, J. J., Ginisty, C., Becuwe-Desmidt, S., Roger, S., Lecomte, Y., Berland, V., Laurier, L., Joly-Testault, V., Médiouni-Cloarec, G., Doublé, C., Martins, B., Salmon, E., Piazza, M., Melcher, D., Pessiglione, M., van Wassenhove, V., Pinel, P., Eger, E., Varoquaux, G., Pallier, C., Dehaene, S., Hertz-Pannier, L., & Thirion, B. Individual Brain Charting dataset extension, second release of high-resolution fMRI data for cognitive mapping. *Scientific Data*; 7(1): 353. 10.1038/s41597-020-00670-4
- (preprint) Richard, H., Martin, L., **Pinho, A. L.**, Pillow, J., & Thirion, B. Fast shared response model for fMRI data. September 2019. arXiv: 1909.12537
- Schrouff, J., Pischedda, D., Genon, S., Fryns, G., **Pinho, A. L.**, Vassena, E., Liuzzi, A. G., & Ferreira, F. S. Gender bias in (neuro)science: Facts, consequences, and solutions *European Journal of Neuroscience*; 50(7):3094-3100. doi: 10.1111/ejn.14397
- Richard, H., **Pinho, A. L.**, Thirion, B., & Charpiat, G. Optimizing deep video representation to match brain activity. CCN2018 Conference on Cognitive Computational Neuroscience, September 2018, Philadelphia, United States. hal id: hal-01868735
- Pinho, A. L., Amadon, A., Ruest, T., Fabre, M., Dohmatob, E., Denghien, I., Ginisty, C., Becuwe-Desmidt, S., Roger, S., Laurier, L., Joly-Testault, V., Médiouni-Cloarec, G., Doublé, C., Martins, B., Pinel, P., Eger, E., Varoquaux, G., Pallier, C., Dehaene, S., Hertz-Pannier, L., & Thirion, B. Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping *Scientific Data*; 5:180105, June 2018. doi: 10.1038/sdata.2018.105.
- Pinho, A. L., Ullén, F., Castelo-Branco, M., Fransson, P., & de Manzano, Ö. Addressing a Paradox: Dual Strategies for Creative Performance in Introspective and Extrospective Networks Cerebral Cortex; 26(7):3052-63, July 2016. doi: 10.1093/cercor/bhv130. Epub 2015 Jun17.
- Pinho, A. L., de Manzano, Ö, Fransson, P., Eriksson, H, & Ullén, F. Connecting to Create: Expertise in Musical Improvisation Is Associated with Increased Functional Connectivity between Premotor and Prefrontal Areas The Journal of Neuroscience; 34(18):6156-63, April 2014. doi: 10.1523/JNEUROSCI.4769-13.2014

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Pinho, A. L., The Neuropsychological Aspects of Musical Creativity. (2018) In Kapoula, Z., Volle, E., Renoult, J., Andreatta, M. (Eds.), Exploring Transdisciplinarity in Art and Sciences (pp 77-103) Springer. doi: 10.1007/978-3-319-76054-4_4

Non-Refereed contributions

Pinho, A. L., Torre, J. J., Shankar, S., & Thirion, B. Individual Brain Charting: Dataset Documentation. Available on: https://project.inria.fr/IBC/

DATASETS

- Pinho, A. L. et al. Individual Brain Charting (IBC). EBRAINS, v3.0 DOI: 10.25493/SM37-TS4
- Pinho, A. L., Hertz-Pannier, L., Thirion, B. IBC. *OpenNeuro*, ds002685 v1.3.1. DOI: 10.18112/openneuro.ds002685.v1.3.1
- Pinho, A. L. et al. Individual Brain Charting dataset extension, second release of high-resolution fMRI data for cognitive mapping. *NeuroVault*, id collection=6618.

 Persistent Identifier: https://identifiers.org/neurovault.collection:6618

Software

- ^{2022 Present} Contributer to *Functional_Fusion*: "Fusion framework for management of functional imaging datasets", URL: https://github.com/DiedrichsenLab/Functional_Fusion
- ^{2022 Present} Contributer to *NeuroCausal*: "An open data sharing and metadata synthesis platform for clinical data", URL: https://neurocausal.github.io
- ^{2021 Present} Contributer to *WiNRepo*: "Women in Neuroscience Repository" URL: https://github.com/WomenInNeuroscience/winrepo
- ^{2017 Present} Contributer to *Nilearn*: Statistics and Machine Learning for NeuroImaging in Python URL: https://github.com/nilearn/nilearn
- ²⁰¹⁵ Present Contributer to the *Repository of Public Analysis Code for the IBC Project*. URL: https://github.com/individual-brain-charting/public_analysis_code
- 2015 2020 Contributer to the *Repository of Public Protocols for the IBC Project*. URL: https://github.com/individual-brain-charting/public_protocols

BLOG POSTS

"The Individual Brain Charting project, a high-resolution, task-fMRI dataset for a comprehensive cognitive mapping of the human brain.", Behind the Paper, Springer Nature - Research Data Community. URL: https://researchdata.springernature.com/posts/the-individual-brain-charting-project

Review Assignments

Ad hoc reviewer for: Cerebral Cortex, NeuroImage, Scientific Data, Scientific Reports, Brain Structure and Function, Brain Imaging and Behavior, Frontiers in Psychology and Peer Computer Science.

MEDIA

- 2023 OHBM Neurosalience Live Podcast So₄Eo₂ Mapping Individual Differences in the Human Brain
- 2016 Communications Human Brain Project: HBP Video Selfie Campaign Ana Luisa
- Interview *Inside Neuroscience Tuning the Brain to Music: Creativity and Connetivity*, Neuroscience Quarterly (newsletter produced by Society for Neuroscience), Spring 2014
- Interview to American Association for the Advancement of Science (AAAS) *Musical Creativity* Science Update
- Participation in the Press Conference of Neuroscience 2013, SfN Conference Musical training shapes brain anatomy and affects function, November 2013
- Interventions in the portuguese media with interviews to the radio TSF and the tv-channel ETV, November 2013

Conferences and Seminars

TALKS

- "Deep behavioral phenotyping in functional MRI for cognitive mapping of the human brain", Seminar at MNI Feindel Brain and Mind Lecture Series organized by The McConnell Brain Imaging Centre (BIC) and Montreal Neurological Institute (The Neuro), McGill University, Montreal
- "Deep behavioral phenotyping in functional MRI for cognitive mapping of the human brain", Seminar at Cognitive Science Lab, International Institute of Information Technology in Hyderabad (IIIT-H)
- "Deep behavioral phenotyping in functional MRI for cognitive mapping of the human brain", Seminar at SIMEXP Lab, Institut universitaire de gériatrie de Montréal (IUGM), University of Montreal
- "The Women in Neuroscience Repository (WiNRepo)", BrainHack Western Fall 2021
- "Individual functional atlasing of the human brain with multitask fMRI data: leveraging the IBC dataset", Online Seminar for the Stockholm University Brain Imaging Centre
- "Individual functional atlasing of the human brain with multitask fMRI data: leveraging the IBC dataset", Online Seminar for the Diedrichsen Lab Western University
- "Individual functional atlasing of the human brain with multitask fMRI data: leveraging the IBC dataset", Online Seminar for the Poldrack Lab Stanford University

- "Individual functional atlasing of the human brain with multitask fMRI data: leveraging the IBC 20204 dataset", Online Seminar for the Institute of Neuroscience and Medicine, Brain and Behaviour (INM-7) – Jülich Research Center "The Women in Neuroscience Repository (WiNRepo): improving the visibility of women neuro-20200 scientists", Open Theatre Sessions, Federation of European Neuroscience Societies (FENS) 2020 Virtual Forum "Segregation of functional territories in individual brains", Oral presentation in Session Model-2020h ing and Analysis: Variability in Brain Activation, Organization for Human Brain Mapping (OHBM) Annual (Virtual) Meeting 2020 "Individual Brain Charting dataset extension: second and third releases", Open Science Room (ses-20208 sion: Open Data 2.0), OHBM Annual (Virtual) Meeting 2020 "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human 2019d brain", Open Science Room (session: From statistical to biological validity), OHBM Annual Meeting 2019, Rome, Italy "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human 20190 brain.", Science Pizza event, Institute for Brain and Spinal Cord (ICM), Paris, France "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human 2019b brain.", The 5th CiNet Conference, Center for Information and Neural Networks (CiNet), Osaka, Japan "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human 2019a brain", 3rd HBP Student Conference, Ghent, Belgium "Individual Brain Charting highlights", Physical HBP-SP2 Meeting, Florence, Italy 2018 "Mecanismos Neurocognitivos associados à Criatividade Musical" ("Neurocognitive Mechanisms of Musical Creativity"), Scientific Congress organized by Núcleo de Estudantes de Farmácia da Associação Académica de Coimbra (NEF/AAC), Coimbra, Portugal "Neural Basis of Expertise in Musical Creativity", 3rd European Professional Women's Network 2013b (EPWN) Lisbon Annual Meeting - Creativity&Innovation - new economic models to overcome the crisis, Lisbon, Portugal "Neural Basis of Expertise in Musical Creativity", Neuroscience 2013 (Annual Meeting of SfN), 20138 San Diego, USA
 - PANEL DISCUSSIONS

BIOCANT Park, Cantanhede, Portugal

2012

Panel Member at OHBM2023 podcast "Neurosalience", Montreal, Canada (see Section Media)

"Anatomical and Functional Brain Reorganizations Associated with Expertise in Musical Creativ-

ity" (PhD Half-Time Seminar), Annual Meeting of Centre for Neuroscience and Cell Biology (CNC),

POSTER PRESENTATIONS "The Cortico-Basal Ganglia-Cerebellar pathways of forming beat- and interval-based temporal pre-2023 dictions", 19th Annual NeuroMusic Conference, MacMaster Institute for Music & The Mind, Hamilton, Canada "The Cortico-Basal Ganglia-Cerebellar pathways of forming beat- and interval-based temporal pre-2023 dictions", Timing Research Forum 2023, Lisbon, Portugal "Assessing stability of individual brain parcellations through a deep-phenotyping, functional-fusion 2023 framework", 2023 Big Data Neuroscience Workshop, Columbus, Ohio, USA "Individual Brain Charting dataset: probing large-scale functional networks with naturalistic stim-2023 uli", OHBM Annual Meeting 2023, Montreal, Canada "The Cortico-Basal Ganglia-Cerebellar pathways of forming beat- and interval-based temporal pre-2023 dictions", L.O.V.E. Conference 2023, Niagara Falls, Canada "Individual functional atlasing for cognitive mapping of the human brain", FENS 2020 Virtual Forum "Segregation of functional territories in individual brains", OHBM Annual (Virtual) Meeting 2020 2020h "WP2.1 Multimodal whole-brain mapping", annual HBP Summit, Athens, Greece 2020a "Functional specialization in human cognition: a large-scale neuroimaging initiative", OHBM An-2019b nual Meeting 2019, Rome, Italy "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human 2019a brain" (Electronic Poster), Neuroscience 2018 (Annual Meeting of SfN), San Diego, USA "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping" (Electronic Poster), 2018b Open Day of the 6th annual HBP Summit, Maastricht, Netherlands "Mapping human cognition at high spatial resolution with a task-rich fMRI dataset", OHBM An-2018a nual Meeting 2018, Singapore "Individual Brain Charting: a task-fMRI dataset for cognitive mapping", 5th annual HBP Summit, 20170 Glasgow, Scotland "Mapping cognitive concepts to brain activity with a high-resolution individual data and a cog-2017b nitive ontology", OHBM Annual Meeting 2017, Vancouver, Canada "Individual Brain Charting: Mapping cognitive concepts to brain activity with a high-resolution in-2017a dividual data and a cognitive ontology", New Concepts in Neural Pattern Encoding, Neuroscience Workshop Saclay (NeWS), Gif-sur-Yvette, France

"Deep neuroimaging data - a community perspective", OHBM 2021 Brainhack

"Individual Brain Charting: a neuroimaging database featuring the first functional atlas of the hu-20166 man brain" (Electronic Poster), Neuroscience 2016 (Annual Meeting of SfN), San Diego, USA "Individual Brain Charting: a comprehensive neuroimaging database towards a macroscopic rep-2016d resentation of the human brain", 4th annual HBP Summit, Florence, Italy "Individual Brain Charting: a comprehensive neuroimaging database towards a macroscopic rep-20160 resentation of the human brain", FENS, Copenhagen, Denmark "Individual Brain Charting: high-resolution normative fMRI database", OHBM Annual Meeting 2016b 2016, Geneva, Switzerland "High resolution encoding of cognitive information within the IBC project", New Concepts in Neu-20168 ral Pattern Encoding, NeWS, Gif-sur-Yvette, France "Feeling and structure - neural correlates of musical improvisation under different constraints", 2014 The Neurosciences and Music - V: Cognitive Stimulation and Rehabilitation, Dijon, France "Functional Brain Reorganizations Associated with Expertise in Musical Creativity", Music, Po-2013 etry & The Brain - Celebrating Wagner's Bicentennial, Lisboa, Portugal "Sex Differences in Training Effects - an fMRI study on Musical Improvisation", Workshop on 2012 Music in Neuroscience, Monte Verità, Ascona, Switzerland "Selection and Generation in Musical Creativity - an fMRI study", The Neurosciences and Music - IV: Learning and Memory, Edinburgh, UK Collaborative-project Presentations Nilearn development - OHBM hackathon 2017, Vancouver, Canada 2017 Nistats development - Brainhack, Paris, France 2016

Pedagogical Skills

Co-Supervision and Mentoring

^{2023 - Present} Co-supervisor of Honours Thesis' student from the Department of Computer Science at Western University.

Title of the thesis: *Improving individual brain parcellations for cognitive mapping through a deep-*

<u>11tle of the thesis</u>: Improving individual brain parcellations for cognitive mapping through a deep-phenotyping, functional-fusion framework.

^{2023 - Present} Co-supervisor of Honours Thesis' student from the Department of Psychology at Western University.

<u>Title of the thesis</u>: *Effects of music induced mood/arousal on divergent thinking.*

Tutor of several Research Assistants affiliated to the Music and Neuroscience Lab at Western University, London Ontario, Canada

2018 - 2020 Tutor of Technician on protocol implementation and MRI data collection for the IBC project.

TEACHING ACTIVITY AND PEDAGOGICAL PROJECTS

"Neurological Basis of Musical Performance: Musical Improvisation", Invited Lecture for the Postgraduate Program of "Neuroscience of Music" at Catholic University of Portugal, Lisbon, Portugal

2023 - Present Enrolment in Western Certificate in University Teaching and Learning

- Module on *The Teaching Assistant Training Program* completed in August 2023 (certificate here).
- Attended 2023 Spring Perspectives on Teaching Conference
- Completed eight Teaching-Assistant E-Learning Series on:
 - (1) Explaining Difficult Concepts in Science;
 - (2) Accessible Online Learning;
 - (3) Fostering Respectful and Inclusive Online Environments;
 - (4) Digital Classroom Management Strategies;
 - (5) Humanizing Your Virtual Classroom;
 - (6) Decolonizing Your Online Classroom;
 - (7) Preparing Students for Online Learning; and
 - (8) Facilitating Discussions Online.

PEDAGOGICAL MATERIALS PRODUCED

The following materials refer to two teaching lessons delivered for completion of the aforementioned *The Teaching Assistant Training Program* module.

- Microteaching Lesson 1: access to slides here.
- Microteaching Lesson 2: access to slides here.

Competences

COMPUTER SKILLS

- Good command in *Linux* and *Windows* environment
- Programming: Python (venv, pytest, Joblib), Bash, C, SQL, Lisp
- Scientific Computing: IPython, NumPy, SciPy, pingouin, MATLAB, GNU Octave, Jupyter Notebook, R, Wolfram Mathematica
- Machine-Learning Frameworks: scikit-learn, Google Al&MachineLearning Transformers
- Data Maniputation&Visualization: pandas, Matplotlib, Seaborn
- Typesetting: LATEX(Document Classes: article, beamer, book and letter)
- Software for Neuroimaging: Nilearn, NiBabel, SPM Statistical Parametric Mapping, FM-RIB Software Library (FSL), FreeSurfer, Papaya, Connectome Workbench, MRIcron, MRIcroGL, BrainVoyager

- Tools for designing and conducting multimodal-stimuli experiments in cognitive neuroscience: 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 GNU Image Manipulation Program, Inkscape, darktable, Unison File Synchronizer, VeraCrypt, FFmpeg, Kdenlive, Statistica (by StatSoft and TIBCO Software)

LANGUAGE SKILLS

- Portuguese native speaker
- English bilingual proficiency
- French professional-working proficiency

Other Information

INDEPENDENT SCIENTIFIC RESEARCH

2022 - present Member of the NeuroCausal Team

2020 - Present Member of the WHATNET: Workgroup for HArmonized Taxonomy of NETworks

Equity, Diversity & Inclusion (EDI)

2018 - Present Affirmative action in gender equity:

 $board\ member\ of\ the\ \textit{Women\ in\ Neuroscience\ Repository\ (WiNRepo)}.\ https://www.winrepo.org/.$

Memberships

Member of the Organization for Human Brain Mapping
Member of the Portuguese Society for Neuroscience

OUTREACH AND COMMUNICATION ACTIVITIES

Promoting OurBrainsCAN to the London ON community at the TD Sunfest

"Multilingual kids review – Portuguese session", OHBM Annual (Virtual) Meeting 2021

Last update: January 2, 2024