## Ana Luísa Pinho

Full Name Ana Luísa Grilo Pinho

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X: @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

<sup>2021 -</sup> Present Tier I *BrainsCAN Postdoctoral Fellow*, University of Western Ontario, London ON, Canada Faculty Advisor and Collaborator: Jessica Grahn and Jörn Diedrichsen

# Appointments held

<sup>2015 – 2020</sup> Postdoctoral Researcher, Parietal Team, Inria Saclay Centre, Paris-Saclay University, France Advisor: Bertrand Thirion

### Education

<sub>2009</sub> – <sub>2015</sub> PHD in Health Sciences (branch: Biomedical Sciences)

Institutions: Karolinska Institutet (Stockholm, Sweden) and

Faculty of Medicine of the University of Coimbra (Coimbra, Portugal)

Thesis title: 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 (IST), University of Lisbon (Lisbon, Portugal)

<u>Thesis Title</u>: 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 (5y): ~389.000 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 Warrant's Prize prize 1" Prostage of NOVA University Lieb on (Lieb on Poetrons)

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

<sup>2009 – 2013</sup> PhD Studentship from Foundation for Science and Technology (FCT) (SFRH/BD/33895/2009) under 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

- 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 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 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.
- 2010 2014 *Graduate Researcher*: investigation of the neural correlates of musical creativity, using fMRI as neuroimaging technique and musical improvisation as model behavior.
- 2005 2006 Undergraduate Research Assistant: process and analysis of seismic data and maintenance of the IST seismic stations.
  - MAIN SCIENTIFIC PROJECTS
- 2022 Present Neuro Causal / Main Investigators: Valentina Borghesani, Sladjana Lukic, Pedro Pinheiro-Chagas, Isil Bilgin
- <sup>2021 Present</sup> BrainsCAN Postdoctoral-Fellowship Project: *Novel brain atlasing techniques to reveal the cerebel-lar role in music cognition* / Main Investigator: **Ana Luísa Pinho** (with supervision from Faculty Advisors)
- <sup>2021 -</sup> Present Canadian Institutes Health Research (CIHR) Project: *Mapping the Human Cerebellum /* Principal Investigator: Jörn Diedrichsen
- 2020 Present WHATNET / Principal Investigators: Lucina Uddin, Nathan Spreng, Thomas Yeo
- Individual Brain Charting (IBC): SP2 Human Brain Organization Work Package 2.1 "Multimodal 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

Aggarwal, H., Ponce, A. F., Shankar, S., Mzayek, Y., Pérez-Millan, A., **Pinho, A. L.**, Thual, A., & Thirion, B. Subject fingerprinting and task classification rely on distinct functional connectivity features (*journal article under review*.)

- 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 under review.)
- Pinho, A. L., Diedrichsen, J., & Grahn, J. A. The Cortico-Basal Ganglia-Cerebellar pathways of forming beat-and interval-based temporal predictions. (*journal article in preparation*.)
- Pinho, A. L., Diedrichsen, J., & Grahn, J. A. Multi-Task Battery of duration-based paradigms. (journal article in preparation.)
- Pinho, A. L. & Diedrichsen, J. Individual brain parcellations for cognitive mapping obtained from a hierarchical Bayesian framework. (*journal article in preparation*.)
- Nettekoven, C., Shahbazi, A., Arafat, B., Skenderija, M., **Pinho, A. L.**, & Diedrichsen, J. Active state differs from resting-state. (*journal article in preparation.*)
- Ponce, A. F., Aggarwal, H., **Pinho, A. L.**, Thual, A., Shankar, S., Torre, J. J., Ginisty, C., Lecomte, Y., Berland, V., Beriot, L., Laurier, L., Joly-Testault, V., Médiouni-Cloarec, G., Hertz-Pannier, L., Doublé, C., Martins, B., & Thirion, B. Individual Brain Charting: final release of high-resolution fMRI data for precision neuroimaging. (journal article in preparation.)
- Clarke, N., Liuzzi, A. G., **Pinho, A. L.**, Borghesani, V., Piscedda, D., Di Maio, P., Dao, T., Imarraine, S., & Licata, A. E. Girls just wanna have funds. (*journal article in preparation*.)

### **Publications**

h-index: 11 i10-index: 14

#### JOURNAL ARTICLES

- 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. 16, 2930. doi: 10.1038/s41467-025-58176-9
- 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. *Imaging Neuroscience*. 3: imag\_a\_00408. doi: 10.1162/imag\_a\_00408
- Nettekoven, C., Zhi, D., Shahshahani, L., **Pinho, A. L.**, Saadon-Grosman, N., Buckner, R. L., & Diedrichsen, J. A hierarchical atlas of functional regions in the cerebellum. *Nature Communications*. 15, 8376. doi: 10.1038/s41467-024-52371-w

- Pinho, A. L., Richard, H., Ponce, A. F., Eickenberg, M., Amadon, A., Dohmatob, E., Denghien, I., Torre, J. J., Shankar, S., Aggarwala, H., 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. Scientific Data 11(1):590. doi: 10.1038/s41597-024-03390-1
- 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*; 229(1):161-181. 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*; 7(3):864-905. 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
- (preprint) Torre, J. J., **Pinho, A. L.**, Shankar, S., Amadon, A., Saignavongs, M., Perrone-Bertolotti, M., Bazeille, T., Dohmatob, E., Denghien, I., Ginisty, C., Becuwe-Desmidt, S., Roger, S., Lecomte, Y., Berland, V., Laurier, L., Médiouni-Cloarec, G., Doublé, C., Martins, B., Lachaux, J.-P., Bissett, P. G., Enkavi, A. Z., Eisenberg, I., Poldrack, R., Santoro, R., Formisano, E., Varoquaux, G., Dehaene, S., Hertz-Pannier, L., & Thirion, B. Individual Brain Charting dataset extension, fourth release of high-resolution fMRI data for cognitive mapping. (updated version in preparation and to be submitted soon.) HAL Id: hal-04668980, version 1
- 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. 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
- 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. 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. doi: 10.1093/cercor/bhv130.
- 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.

  doi: 10.1523/JNEUROSCI.4769-13.2014

### CONFERENCE PAPERS

- Pinho, A. L., Yoon, J., & Diedrichsen, J. Individual brain parcellations for cognitive mapping obtained from a hierarchical Bayesian framework. CCN2024 Conference on Cognitive Computational Neuroscience, August 2024, Boston, United States. https://2024.ccneuro.org/poster/?id=265 (DOI will become available soon.)
- 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. In Moia, S. *et al.* Proceedings of the OHBM Brainhack 2022. *Aperture Neuro*; 4:12-13. doi: 10.52294/001c.92760
- 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

### Воокѕ

2018

2020

**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/

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- 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

<sup>2024 - Present</sup> Contributer to *HierarchBayesParcel*: "A Hierarchical Bayesian Brain Parcellation Framework for fusion of functional imaging datasets.",

URL: https://github.com/DiedrichsenLab/HierarchBayesParcel

- <sup>2023</sup> Present Contributer to *SUITPy*: "Analysis and visualization of cerebellar imaging data.", URL: https://github.com/DiedrichsenLab/SUITPy
- <sup>2022 Present</sup> Contributer to *Functional\_Fusion*: "Fusion framework for management of functional imaging datasets", URL: https://github.com/DiedrichsenLab/Functional\_Fusion
- <sup>2022 Present</sup> Contributer to *NeuroCausal*: "An open data sharing and metadata synthesis platform for clinical data", URL: https://neurocausal.github.io
- <sup>2021 Present</sup> Contributer to *WiNRepo*: "Women in Neuroscience Repository" URL: https://github.com/WomenInNeuroscience/winrepo
- <sup>2017 Present</sup> Contributer to *Nilearn*: "Statistics and Machine Learning for NeuroImaging in Python" URL: https://github.com/nilearn/nilearn
- <sup>2015</sup> Present Contributer to *public\_analysis\_code*: "Repository of Public Analysis Code for the IBC Project" URL: https://github.com/individual-brain-charting/public\_analysis\_code
- Contributer to *public\_protocols*: "This repository hosts 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

### **EDITORIAL AND REVIEW ACTIVITIES**

<sup>2025 - present</sup> Editor for the upcoming special issue in *Frontiers* on "Sex Bias in Neuroscience: Insights from Computational Models to Clinical Data"

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

### Conferences and Seminars

**TALKS** 

Note: Slides of my latest talks can be found on SlideShare.

- "The Striatal-Cerebellar Pathways of forming Beat- and Interval-based Temporal Predictions", Talk at the Symposium on Timing and Rhythm (STAR), Michigan State University, Lansing, Michigan, USA
- "Deep Behavioral Phenotyping in Systems Neuroscience for Functional Atlasing and Cognitive Mapping of the Human Brain", Talk at the Department of Psychology, University of Alberta, Edmonton, Alberta, Canada
- "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, Quebec, Canada
- "Deep behavioral phenotyping in functional MRI for cognitive mapping of the human brain", Online 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, Montreal, Quebec, Canada
- "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 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 neuroscientists", Open Theatre Sessions, Federation of European Neuroscience Societies (FENS) 2020 Virtual Forum

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-2020a sion: Open Data 2.0), OHBM Annual (Virtual) Meeting 2020 "Individual Brain Charting, a high-resolution fMRI dataset for cognitive mapping of the human 2010d 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 5<sup>th</sup> 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", 3<sup>rd</sup> HBP Student Conference, Ghent, Belgium "Individual Brain Charting highlights", Physical HBP-SP2 Meeting, Florence, Italy 2018 "Mecanismos Neurocognitivos associados à Criatividade Musical" ("Neurocognitive Mechanisms 2014 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", Neuroscience 2013 (Annual Meeting of SfN), 2013a San Diego, USA "Anatomical and Functional Brain Reorganizations Associated with Expertise in Musical Creativ-2012 ity" (PhD Half-Time Seminar), Annual Meeting of Centre for Neuroscience and Cell Biology (CNC), BIOCANT Park, Cantanhede, Portugal PANEL DISCUSSIONS Panel Member at OHBM2023 podcast "Neurosalience", Montreal, Canada (see Section Media) 2023 "Deep neuroimaging data - a community perspective", OHBM 2021 Brainhack 2021 Poster Presentations "Individual brain parcellations for cognitive mapping obtained from a hierarchical Bayesian frame-2024 work", Cognitive Computational Neuroscience 2024 (CCN2024), Boston, Massachusetts, USA "The Cortico-Basal Ganglia-Cerebellar pathways of forming beat- and interval-based temporal pre-2024

"Segregation of functional territories in individual brains", Oral presentation in Session Model-

2020h

dictions", The Neurosciences and Music - VIII: Wiring, re-wiring, and well-being, Helsinki, Finland

"The Cortico-Basal Ganglia-Cerebellar pathways of forming beat- and interval-based temporal pre-

dictions", Cognitive Neuroscience Society (CNS), Toronto, Canada

dictions", L.O.V.E. Conference 2024, Niagara Falls, Canada "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 3, 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 Fo-"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 20108 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, 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 "Individual Brain Charting: a neuroimaging database featuring the first functional atlas of the 2016e

"The Cortico-Basal Ganglia-Cerebellar pathways of forming beat- and interval-based temporal pre-

2024

human brain" (Electronic Poster), Neuroscience 2016 (Annual Meeting of SfN), San Diego, USA

2016d "Individual Brain Charting: a comprehensive neuroimaging database towards a macroscopic representation 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-2016a 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, Poetry & 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 Mu-2011 sic - IV: Learning and Memory, Edinburgh, UK Collaborative-project Presentations Nilearn development - OHBM hackathon 2017, Vancouver, Canada 2017 Nistats development - Brainhack, Paris, France 2016 Conference Service Member of the jury board for evaluating best projects, Brainhack Western 2025 Courses and Workshops Nistats - NeuroSpin, Saclay Nuclear Research Centre (CEA-Saclay), France 2018 Short Course 2: Data Science and Data Skills for Neuroscientists, Neuroscience 2016 (Annual Meeting 2016 of SfN), San Diego, USA Probabilistic inference and the brain - org. by Stanislas Dehaene, Collège de France, Paris, France 2015b Neuroimaging meta-analysis methods - NeuroSpin, CEA-Saclay, France 2015a Advanced Behaviour Technology - Champalimaud Neuroscience Programme (CNP) Summer School, 2014 Champalimaud Centre for the Unknown, Lisbon, Portugal. http://www.neuro.fchampalimaud.org/en/events/event/202/.

2013	Introduction to Neuroinformatics - INCF Short Course, Stockholm, Sweden
2011b	<i>Memory</i> , Course for Master and PhD studies by Lars-Göran Nilsson, Stockholm University, Stockholm, Sweden, Fall 2011
2011a	Positron emission tomography imaging of the Central Nervous System (CNS), Postgraduate Course by Dr. Andrea Varrone, Dep. Clinical Neuroscience, KI, Stockholm, Sweden
2010d	Workshop on Vision and Brain Imaging, KTH Royal Institute of Technology, Stockholm, Sweden http://agenda.albanova.se/conferenceDisplay.py?confId=2454
2010C	SPM8 for Basic and Clinical Investigator, Software Training Workshop by Thomas A. Zeffiro and Robert L. Savoy at the Martinos Center, Boston, Massachusetts, USA <a href="http://neurometrika.org/BasicSPM">http://neurometrika.org/BasicSPM</a>
2010b	MR driving license course, MR Research Center, KI, Stockholm, Sweden
2010a	Visualizing Molecular & Cellular Processes with 3D Animation (using Autodesk Maya 3D animation software), Institute of Molecular Pathology and Immunology of the University of Porto (IPATIMUP), Porto, Portugal. https://www.ipatimup.pt/Site/ActivityView.aspx?ActivityId=1206
	Online Courses
2021	<i>Principles of fMRI 2</i> - Johns Hopkins University and University of Colorado (issued by Coursera)
2021	Principles of fMRI 1 - Johns Hopkins University (issued by Coursera)
2020 – 2021	Django for Everybody Specialization: (course 1) Web Application Technologies and Django; (course 2) Building Web Applications in Django; (course 3) Django Features and Libraries; (course 4) Using JavaScript, JQuery, and JSON in Django - University of Michigan (issued by Coursera)
2018	Statistical Learning - Stanford University (issued by edX)
2016b	Machine Learning - Stanford University (issued by Coursera)
2016a	Introduction to Philosophy - The University of Edinburgh (issued by Coursera)
	Media
2025	Interview to <i>The Transmitter</i> published on 11 <sup>th</sup> February, 2025 to mark "The International Day of Women and Girls in Science")
2023	OHBM Neurosalience Live Podcast So <sub>4</sub> Eo <sub>2</sub> — Mapping Individual Differences in the Human Brain
2016	Communications Human Brain Project: HBP Video Selfie Campaign - Ana Luisa
2014	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

# Andragogical Skills

#### TEACHING INTERESTS

- Principles of fMRI and Advanced Methods in Neuroimaging
- Biostatistics and Data Science for Neuroscience
- · Machine Learning for Biomedical Data
- Systems Neuroscience and Meta-Analytic Approaches in Human Neuroimaging
- Cognitive Computational Neuroscience
- Neuroscience of Music

#### Co-Supervision and Mentoring

- <sup>2021 -</sup> Present Tutor of several Research Assistants affiliated to the Music and Neuroscience Lab at Western University, London Ontario, Canada
- <sup>2023 2024</sup> Co-supervisor of Honours Thesis' Student, **Jennifer Yoon**, from the Department of Computer Science at Western University.
  - <u>Title of the thesis</u>: *Improving individual brain parcellations for cognitive mapping through a hierar-chical Bayesian framework.* Final Grade: 88% (UWO's grading scale: A)
- <sup>2023 2024</sup> Co-supervisor of Honours Thesis' Student, **Velda Addo**, from the Department of Psychology at Western University.
  - <u>Title of the thesis</u>: *The Effect of Music-Induced Mood and Arousal on Creative Cognition.* Final Grade: 89% (UWO's grading scale: A)
- 2018 2020 Tutor of Technician on protocol implementation and MRI data collection for the IBC project.

### TEACHING ACTIVITY

- 2023 2024 Enrolment in the Western Certificate in University Teaching and Learning (WCUTL)
  - Certificate of completion of WCUTL
  - Letter of Accomplishment of WCUTL with detailed description of the modules covered in the program
  - Certificate of completion of the *Microteaching* module, a curricular component of the WCUTL program.

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

### TEACHING MATERIALS

2023

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

- Microteaching Lesson 1: access to slides here.
- Microteaching Lesson 2: access to slides here.
- Teaching and Mentor Program lecture on the *Neurobiological Basis of Musical Performance: Musical Improvisation.* Access to slides here.

# Competences

#### COMPUTER SKILLS

- Good command in *Unix* operating systems (e.g. *Ubuntu: Linux Distribution*) and *Windows* operating system
- 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, PyTorch, Google Al&MachineLearning Transformers
- Data Maniputation&Visualization: pandas, Matplotlib, Seaborn
- $\bullet \ \ \textbf{Typesetting} \hbox{: $ \underline{\texttt{LTE}}$X$(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 Women in Neuroscience Repository (WiNRepo). https://www.winrepo.org.

**Memberships** 

Member of the Portuguese Society for Neuroscience

OUTREACH AND COMMUNICATION ACTIVITIES

<sup>2022 - Present</sup> Organization of Coffee Breaks for the members of the Western Centre for Brain and Mind at Western University

Promoting OurBrainsCAN to the London ON community at the TD Sunfest

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

"Neural Basis of Expertise in Musical Creativity", 3<sup>rd</sup> European Professional Women's Network (EPWN) Lisbon Annual Meeting - Creativity&Innovation - new economic models to overcome the crisis, Lisbon, Portugal