Alexis Thual

Post-doc in computational neuroscience
Full-stack developer & Machine Learning engineer

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Professional experience

London oct. 2023 – jun. 2023
Research Scientist intern - FAIR Meta, Brain & AI team
Developed and published a method to transfer algorithms that decode visual perception from fMRI from one human individual to another. Under the supervision of H. Banville and J-R. King

Paris nov. 2019 – jan. 2018
Founder - Arkhn
Open-source project meant to standardize healthcare data; lead technical developement and managed a team of 8
arkhn.com

Paris nov. 2019 – jul. 2018
Data scientist & web developer - Bureau Ouvert de l'Assemblée Nationale
Animated weekly meetings at the French Parliament; developed web-based tools fostering public action transparency
budget.parlement-ouvert.fr, *jo.parlement-ouvert.fr*, *transparence.parlement-ouvert.fr*, *questions.parlement-ouvert.fr*

Paris aug. 2018 – apr. 2018
Research intern - Laboratoire de Sciences Cognitives et Psycholinguistique at ENS Ulm
Implemented non-supervised segmentation of audio signal to mimic language acquisition of phonemes and words

London aug. 2017 – apr. 2017
Forward deployed software engineer intern - Palantir
Contributed to developping web-applications, managing a Hadoop cluster and implementing industry optimisation algorithms

Academic background

Paris jun. 2024 – nov. 2020
Neurospin (CEA) & Parietal (Inria) - PhD in neuroscience
My research consists in using Optimal Transport to compare cortical structures of human and non-human primates and training models that decode brain activity. Under the supervision of S. Dehaene and B. Thirion

Paris sept. 2018 – sept. 2017
ENS Cachan - Research master
Master Mathématiques, Vision, Apprentissage
Natural Language Processing, Computer Vision, Signal Processing, Convex Optimization, Reinforcement Learning, Graphs in Machine Learning, Models for Neuroscience

Paris jul. 2018 – sept. 2014
École polytechnique - Engineering curriculum
Master equivalent in applied maths, computer science and physics; majored in statistics and computer science

Paris jul. 2014 – sept. 2012
Lycée Louis-Le-Grand - Preparatory school
Majored in mathematics, physics and computer science

Other skills

Public speaking
Team management
Illustration and design

Personality

Traits Enthusiastic, persistent, organised, curious

Languages

French	Mother tongue
English	Full proficiency C2 (2011)
Mandarin	Intermediate HSK4 (2016)

Publications

Functional alignment of MRI signal decodes visual semantics across species
Alexis Thual, Haiyan Wang, Himanshu Aggarwal, Fernanda Ponce, Wouter Depuydt, Qi Zhu, Wim Vanduffel, Stanislas Dehaene, and Bertrand Thirion
In preparation

Sample-efficient decoding of visual stimuli from fMRI through inter-individual functional alignment
Alexis Thual, Yohann Benchetrit, Felix Geilert, Jérémy Rapin, Iurii Makarov, Stanislas Dehaene, Bertrand Thirion, Hubert Banville, Jean-Rémi King
arXiv, 2024

Individual Brain Charting third release, probing brain activity during Movie Watching and Retinotopic Mapping
Ana Luísa Pinho, Hugo Richard, Michael Eickenberg, Alexis Amadon, Elvis Dohmatob, Isabelle Denghien, Juan Jesús Torre, Swetha Shankar, Himanshu Aggarwal, Ana Fernanda Ponce, **Alexis Thual**, Thomas Chapalain, Chantal Ginisty, Séverine Becuwe-Desmidt, Séverine Roger, Yann Lecomte, Valérie Berland, Laurence Laurier, Véronique Joly-Testault, Gaëlle Médiouni-Cloarec, Christine Doublé, Bernadette Martins, Gaël Varoquaux, Stanislas Dehaene, Lucie Hertz-Pannier, Bertrand Thirion
Nature Scientific Data, 2024

Should one go for individual-or group-level brain parcellations? A deep-phenotyping benchmark
Bertrand Thirion, Himanshu Aggarwal, Ana Fernanda Ponce, Ana Luísa Pinho, **Alexis Thual**
Brain Structure and Function, 2023

Aligning individual brains with Fused Unbalanced Gromov-Wasserstein
Alexis Thual, Huy Tran, Tatiana Zemskova, Nicolas Courty, Rémi Flamary, Stanislas Dehaene, Bertrand Thirion
NeurIPS, 2022

From deep brain phenotyping to functional atlasing
Bertrand Thirion, **Alexis Thual**, Ana Luísa Pinho
Current Opinion in Behavioral Science, 2021

A k-nearest neighbours approach to unsupervised spoken term discovery
Alexis Thual, Corentin Dancette, Julien Karadayi, Juan Benjumea, Emmanuel Dupoux
IEEE Spoken Language Technology Workshop (SLT), 2018