

Marie-Constance Corsi

INRIA RESEARCH SCIENTIST

NERV Lab, Paris Brain Institute (ICM)

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Academic Positions

Inria research scientist

ARAMIS & NERV PROJECT-TEAM, PARIS BRAIN INSTITUTE, INRIA, CNRS UMR 7225, INSERM U1127

Paris, France

2022 - now

Postdoctoral researcher

ARAMIS PROJECT-TEAM, PARIS BRAIN INSTITUTE, INRIA, CNRS UMR 7225, INSERM U1127

Paris, France

2016 - 2022

Advisor: Dr Fabrizio De Vico Fallani

Projects:

Modeling and Predicting Brain-Computer Interface Learning from Dynamic Networks
Brain Network Models of Motor Recovery After Stroke

Research Assistant

LABORATOIRE DES CAPTEURS INNOVANTS, CEA-LETI

Grenoble, France

2012 - 2015

Supervisors: Prof. Gilles Cauffet, Dr. Etienne Labyt, Dr. Sophie Morales

Thesis: Helium 4 Optically-Pumped Magnetometers: Development and Proof of Concept in Magnetocardiography & Magnetoencephalography

Education

PhD in Biomedical Instrumentation

GRENOBLE ALPES UNIVERSITY

Grenoble, France

2015

MSc in Neuropsychology and Clinical Neurosciences

GRENOBLE ALPES UNIVERSITY

Grenoble, France

2015

Academic degree in Information and Communication Technologies for Health

UNIVERSITY OF MONTPELLIER II

Montpellier, France

2012

MSc in Telecommunication Engineering

INSTITUT MINES-TÉLÉCOM (IMT) ATLANTIQUE (PREVIOUSLY TELECOM BRETAGNE)

Brest, France

2012

Publications

3	Book chapters	2 as first author
27	International journal articles	13 as first/last author, 3 as second/second-last author
13	Conferences with full-length peer-reviewed proceedings	3 as first/last author, 4 as second/second-last author
57	Conferences abstracts	41 as first/last author, 1 as second author
5	Patents	2 released

Supervision

6	PhD students	1 completed, 5 ongoing
2	Research engineers working on HappyFeat	ongoing
11	Master students	11 completed
3	Bachelor students	3 completed

Fundings

2026-29	MANET , Agence Nationale de Recherche (ANR JCJC) - PI	285 keuros
2026	Young Researcher and Innovator Conference grant , EEG101 COST Action	2.5 keuros
2024	H-Code , Paris-Saclay University - co-PI	3.6 keuros
2023-25	Transatlantic Research Partnership , FACE Foundation - co-PI	20 keuros
2023	Financial support for the CORTICO days organization , DIM-C-Brains of the region Ile-de-France	9.9 keuros
2023	Financial support for the CORTICO days organization , Inria Paris	2 keuros

Awards

2025	Early Career Award (ECA) , International BCI Society	<i>Banff, Canada</i>
2022	FORUM award , Federation of European Neuroscience Societies (FENS)	<i>Paris, France</i>
2021	Grand Challenge: Passive BCI Hackathon, ranked 3rd , Neuroergonomics Conference - in collaboration with Q. Barthélemy, I. Hoxha, S. Chevallier and F. Yger	<i>Virtual event</i>
2021	Best Oral Presentation Award & Student Award¹ - signal processing category , International Conference on Brain-Computer Interface (vBCI)	<i>Virtual event</i>
2020	Clinical BCI Challenge , IEEE WCCI2020, ranked 1 st in the Within-Subject category (RIGOLETTO team leader, collaboration with Florian Yger and Sylvain Chevallier)	<i>Virtual event</i>

Institutional Responsibilities

Data Referent Committee	<i>Inria Paris</i>
MEMBER	2026-
Course Council of the University Master's in Neural Engineering	<i>University of Chieti-Pescara, Italy</i>
MEMBER	2026-
Center Committee	<i>Inria Paris</i>
MEMBER (COLLÈGE A, DEPUTY)	2025-
Doctoral Advisory Committee	<i>Inria Paris</i>
MEMBER	2025-

Participation in colloquia

Invited talks at international conferences and workshops

France-Taiwan STC workshop - AI & Health	<i>Paris, France</i>
ELECTROPHYSIOLOGY FOR HEALTH: INNOVATIONS & APPLICATIONS	Oct, 2025
11th BCI meeting - plenary session	<i>Banff, Canada</i>
INVESTIGATING BRAIN INTERACTIONS: A DUAL PATH TO UNDERSTANDING AND IMPROVING BCIS - EARLY CAREER AWARD	June, 2025
11th BCI meeting workshop	<i>Banff, Canada</i>
HARNESSING MOABB (AI-DATA WORKSHOP)	June, 2025
IEEE International Symposium on Biomedical Imaging (ISBI)	<i>Cartegena, Colombia</i>
ENSEMBLE OF RIEMANNIAN CLASSIFIERS FOR MULTIMODAL DATA: FUCONE APPROACH FOR M/EEG DATA	April, 2023
NeuroTechX 2022	<i>Paris and worldwide</i>
ALTERNATIVE FEATURES AND MARKERS FOR BETTER BCIS	Oct, 2022
Graz BCI conference workshop	<i>Graz, Austria</i>
SPATIOTEMPORAL NEURAL CORRELATES OF MI-BASED BCI TRAINING	Sept, 2019
Multiscale Brain Network analysis workshop	<i>Naples Italy</i>
LOOKING FOR NEUROPHYSIOLOGICAL CORRELATES OF BCI LEARNING	Sept, 2019

Conference talks

IEEE MetroXRaine - NxGenBCI workshop	<i>Ancona, Italy</i>
LEVERAGING NEUROMARKERS TO INFORM AND IMPROVE BCIS	Oct, 2025
BIOMAG 2024	<i>Sydney, Australia</i>
USING MODELS FOR CLASSIFICATION: FROM CLINICAL DIAGNOSIS TO BRAIN-COMPUTER INTERFACES APPLICATIONS	August, 2024
NeuroFrance meeting	<i>Lyon France</i>
MEASURING NEURONAL AVALANCHES TO INFORM BRAIN-COMPUTER INTERFACES	May, 2023
Brain criticality meeting	<i>Bethesda, MD, USA & virtual</i>
EXPLOITING BRAIN CRITICAL DYNAMICS TO INFORM BRAIN-COMPUTER INTERFACES PERFORMANCE	Nov, 2022
CNS, 31st Annual Computational Neuroscience Meeting	<i>Melbourne, Australia</i>
EXPLOITING BRAIN CRITICAL DYNAMICS TO INFORM BRAIN-COMPUTER INTERFACES PERFORMANCE	July, 2022
Networks 2021	<i>Virtual</i>
CORE-PERIPHERY MARKERS OF LONGITUDINAL BCI FROM MULTIPLEX BRAIN NETWORKS	July, 2021
8th International BCI Meeting	<i>Virtual event</i>
FUNCTIONAL CONNECTIVITY PREDICTS MI-BASED BCI LEARNING - STUDENT AWARD	June, 2021

IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)	<i>Virtual event</i>
RIEMANNIAN GEOMETRY ON CONNECTIVITY FOR CLINICAL BCI	June, 2021
Journées Jeunes Chercheurs en Interfaces Cerveau-Ordinateur et Neurofeedback (JJC-ICON)	<i>Lille, France</i>
LOOKING FOR NEUROPHYSIOLOGICAL CORRELATES OF BCI LEARNING	March, 2019
Seminars	
Essex BCI-NE webinar	<i>Virtual</i>
INVESTIGATING NEURONAL AVALANCHES: A DUAL PATH TO UNDERSTANDING AND IMPROVING BCIS	Dec, 2025
BIDS workshop	<i>Paris France</i>
NETBCI DATASET...A BIDS JOURNEY	Nov, 2025
Institut de Neuromodulation (INM) seminar	<i>Paris, France</i>
DECODING BRAIN INTERACTIONS: TOWARD UNDERSTANDING AND IMPROVING BRAIN-COMPUTER INTERFACES	Nov, 2025
Rice University workshop	<i>Paris, France</i>
INVESTIGATING NEURONAL AVALANCHES: A DUAL PATH TO UNDERSTANDING AND IMPROVING BCIS...AND MORE!	Sept, 2025
ICNA seminar, ONERA	<i>Salon de Provence, France</i>
INVESTIGATING BRAIN INTERACTIONS: A DUAL PATH TO UNDERSTANDING AND IMPROVING BCIS	Aug, 2025
ICM PI retreat	<i>Paris, France</i>
NEURONAL AVALANCHES FOR NON-INVASIVE BRAIN-COMPUTER INTERFACES	Dec, 2024
Journées Inria "Handicap, perte d'autonomie & numérique"	<i>Paris, France</i>
NETWORK NEUROSCIENCE FOR BRAIN-COMPUTER INTERFACES: PRACTICAL EXAMPLES	March & Nov, 2024
1st EBRAINS France workshop	<i>Marseille, France</i>
NETWORK NEUROSCIENCE FOR BRAIN-COMPUTER INTERFACES	October, 2024
Forum TERATEC	<i>Paris, France</i>
THE SCIENCE OF BRAIN-COMPUTER INTERFACE	May, 2024
MIND Seminar, Inria Saclay	<i>Saclay, France</i>
USING NON-INVASIVE CLOSED-LOOP SYSTEMS: INSIGHTS FROM MACHINE AND USERS-CENTRED APPROACHES	Feb, 2024
TAU Seminar, Paris-Saclay University	<i>Saclay, France</i>
IMPROVING NON-INVASIVE BRAIN-COMPUTER INTERFACE (BCI) VIA MULTIMODAL AND LONGITUNAL APPROACHES	June, 2023
ICM Computational domain meeting, Paris Brain Institute	<i>Paris, France</i>
MULTIMODAL INTEGRATION IN BRAIN-COMPUTER INTERFACES TO IMPROVE NEUROLOGICAL REHABILITATION	Feb, 2023
Pyladies Paris event, Paris Brain Institute	<i>Paris, France</i>
IMPROVING NON-INVASIVE BRAIN-COMPUTER INTERFACE (BCI): CONTRIBUTIONS OF OPEN-SOURCE SOFTWARE TOOLS	Feb, 2023
Laboratoire Bordelais de Recherche en Informatique (LaBRI, CNRS UMR 5800, Inria)	<i>Bordeaux, France</i>
IMPROVING BCI: INSIGHTS FROM MULTIMODAL AND LONGITUDINAL ANALYSIS!	Feb, 2022
Journée Jeunes Chercheurs en Interfaces Cerveau-Ordinateur et Neurofeedback (JJC-ICON'2021)	<i>Virtual event</i>
M/EEG DATA ANALYSIS: WHERE IT ALL BEGINS!	May, 2021
Institut de Neurosciences des Systèmes (INS, UMR1106)	<i>Marseille, France</i>
IMPROVING BCI: INSIGHTS FROM MULTIMODAL AND LONGITUDINAL ANALYSIS...AND OPMs!	Sept, 2020
Brain Dynamics and Cognition (DYCOG) team - Lyon Neuroscience Research Center (CRNL)	<i>Lyon, France</i>
OPTICALLY-PUMPED MAGNETOMETERS: HYPE OR REAL OPPORTUNITY FOR BCI?	Nov, 2019
Experimental neurosurgery lab, Paris Brain Institute	<i>Paris, France</i>
LOOKING FOR NEUROPHYSIOLOGICAL CORRELATES OF BCI LEARNING	Oct, 2019
Lundis du CENIR, Paris Brain Institute	<i>Paris, France</i>
PRESENTATION OF THE ONGOING PROTOCOLS	Oct, 2019
Athena project-team, Inria Sophia Antipolis	<i>Sophia Antipolis, France</i>
IMPROVING BCI: INSIGHTS FROM MULTIMODAL AND LONGITUDINAL ANALYSIS	Feb, 2019
Cafés de la neuroinformatique, Paris Brain Institute	<i>Paris, France</i>
WHAT IF YOU COULD WRITE AS FAST AS YOU THINK?	Nov, 2018
Developmental Neuroimaging Lab, CEA/SAC/DSV/DRM/NeuroSpin	<i>Saclay, France</i>
HELIUM 4 OPTICALLY-PUMPED MAGNETOMETERS : DEVELOPMENT AND PROOF OF CONCEPT IN MAGNETOCARDIOGRAPHY AND MAGNETOENCEPHALOGRAPHY	Feb, 2016

Conference chairing

IEEE MetroXRINE

NXGENBCI SPECIAL EVENT

Ancona, Italy

Oct, 2025

BIOMAG 2024

DATA ANALYSIS / INFORMATICS ORAL SESSION

Sydney, Australia

Aug, 2024

BCI Thursdays: Online Events

NEXT GENERATION: TRAINEE SPOTLIGHTS

Virtual events

Nov, 2021; May, 2022; Nov, 2022

Cutting'EEG conference

CHALLENGING SETUPS FOR CUTTING EDGE EEG/MEG RESEARCH

Aix-en-Provence, France

Oct, 2021

Journée CORTICO 2020

TAKING BCIS OUT OF THE LAB – INNOVATIVE PARADIGMS AND APPLICATIONS

Virtual event

Oct, 2021

Cutting'EEG conference

OUTSIDE THE BOX

Paris, France

June, 2018

Scientific events organization

Conferences & symposia

PracticalMEEG 2025

MEMBER OF THE ORGANIZATION COMMITTEE - OFFICIAL PAGE [🔗](#)

Aix-en-Provence, France

Oct, 2025

MetroXRINE

CO-ORGANIZER OF THE "NEXT GENERATION BRAIN-COMPUTER INTERFACES" WORKSHOP - OFFICIAL PAGE [🔗](#)

Ancona, Italy

Oct, 2025

Journées Scientifiques Inria - Neuroinformatique & handicap: comprendre, diagnostiquer et accompagner

CO-ORGANIZED WITH P. MAUREL AND C. CURY AT INRIA PARIS

Paris, France

June, 2025

CuttingEEGX

CHAIR OF THE "EVOLVING METHODS" SYMPOSIUM - GITHUB PAGE [🔗](#)

Virtual

Oct, 2024

BIOMAG 2024

CO-CHAIR WITH PIERPAOLO SORRENTINO OF THE "ALTERNATIVE FUNCTIONAL CONNECTIVITY ESTIMATORS AND THEIR REAL-LIFE APPLICATION" SYMPOSIUM - OFFICIAL PAGE [🔗](#)

Sydney, Australia

August, 2024

Neuroergonomics

MEMBER OF THE SCIENTIFIC COMMITTEE - OFFICIAL PAGE [🔗](#)

Bordeaux, France

July, 2024

CuttingGardens

MEMBER OF THE ORGANIZATION COMMITTEE - OFFICIAL PAGE [🔗](#) & ORGANIZATION OF A BCI SESSION - GITHUB PAGE [🔗](#)

Multi-hub meeting, worldwide

Oct, 2023

Journées CORTICO 2023

CO-ORGANIZED WITH SYLVAIN CHEVALLIER AT PARIS BRAIN INSTITUTE - 100 PARTICIPANTS - OFFICIAL PAGE [🔗](#)

Paris, France

May, 2023

PracticalMEEG 2022

MEMBER OF THE ORGANIZATION COMMITTEE - OFFICIAL PAGE [🔗](#)

Aix-en-Provence, France

Dec, 2022

Workshops

Symposium on Brain models as a tool for a multimodal integration [🔗](#)

CO-CHAIR WITH PIERPAOLO SORRENTINO - 1ST OHBM SATELLITE MEETING

Virtual

Sept., 2025

Special Session on Decoding the brain time series [🔗](#)

CO-ORGANIZED WITH BRUNO ARISTIMUNHA, FLORIAN YGER & SYLVAIN CHEVALLIER - 35TH IEEE INTERNATIONAL WORKSHOP ON MACHINE LEARNING FOR SIGNAL PROCESSING (IEEE MLSP 2025)

Istanbul, Turkey

August, 2025

Exploring features to improve BCI: challenges and opportunities [🔗](#)

CO-ORGANIZED WITH SERAFEIM PERDIKIS & TRISTAN VENOT - 11TH BCI MEETING

Banff, Canada

June, 2025

Designing Brain-Computer Interfaces, from theory to real-life scenarios [🔗](#)

CO-ORGANIZED WITH ARTHUR DESBOIS, BRUNO ARISTIMUNHA, PIERRE GUETSCHER, & PIERRE CLISSON - 9TH GRAZ BCI CONFERENCE

Graz, Austria

Sept., 2024

Virtual Brains: From data to modeling and back - official page [🔗](#)

CO-ORGANIZED WITH DAMIEN DEPANNEMAECCKER, LEONARDO L. GOLLO, SPASE PETKOSKI, & PIERPAOLO SORRENTINO - COMPUTATIONAL NEUROSCIENCE MEETING 2024

Natal, Brazil

July, 2024

Designing Brain-Computer Interfaces, from theory to real-life scenarios

CO-ORGANIZED WITH KALOUCABRERA CASTILLOS, PIERRE CLISSON, FREDERIC DEHAIS, & ARTHUR DESBOIS - NEUROERGONOMICS 2024

Bordeaux, France

July, 2024

Challenges in BCI-based neurofeedback applications for neurological disorders

CO-ORGANIZED WITH FABIEN LOTTE, CAMILLE JEUNET, NATHALIE GEORGE, & FABRIZIO DE VICO FALLANI - BCI MEETING 2023

Sonian Forest, Belgium

June, 2023

Offline and online tools for real-world BCI applications

CO-ORGANIZED WITH SYLVAIN CHEVALLIER, PIERRE CLISSON, PEDRO RODRIGUES, & ARTHUR DESBOIS - BCI MEETING 2023

Sonian Forest, Belgium

June, 2023

Next Generation: Trainee Spotlights- BCI Thursdays 2023

IN COLLABORATION WITH THE POSTDOC AND STUDENTS COMMITTEE OF THE BCI SOCIETY - OFFICIAL PAGE

Virtual events

Nov, 2021, May, 2021 & Nov, 2022

How do we learn to use a BCI? - Graz conference

CO-ORGANIZED WITH FABIEN LOTTE, CAMILLE JEUNET, & FABRIZIO DE VICO FALLANI - OFFICIAL PAGE

Graz, Austria

Sept, 2019

Hands-on tutorials

Fieldtrip workshop tutor on iEEG data processing - WIRED

TUTORIAL LED BY ROBERT OOSTENVELD (3 HOURS) - OFFICIAL PAGE

Paris, France

March, 2024

Fieldtrip workshop tutor on M/EEG data processing - Practical MEEG

TUTORIAL LED BY ROBERT OOSTENVELD (10 HOURS) - OFFICIAL PAGE

Aix-en-Provence, France & virtual

Dec, 2022

BCI using OpenViBE, an open-source software platform

CO-ORGANIZED WITH ARTHUR DESBOIS - PRACTICALMEEG

Aix-en-Provence, France & virtual

Dec, 2022

OpenViBE: an open-source software platform for Brain-Computer Interfaces

CO-ORGANIZED WITH ARTHUR DESBOIS - CUTTINGEEG

Aix-en-Provence, France

Oct, 2021

Supervision

PhD Theses

Giovanni Messuti

M2 IN PHYSICS (UNIVERSITY OF SALERNO, ITALY)

Multimodal Integration to Improve and Inform Brain-Computer Interfaces (6-month research visit) [G.1]

Co-supervision with S. Scarpetta

Nov. 2025 - present

Baptiste Fagué

M2 IN "BIOENGINEERING AND INNOVATION IN NEUROSCIENCES" (ESPCI-UNIV, FRANCE) & MÈNG FROM ECOLE POLYTECHNIQUE

Towards a Brain-Computer Interface for Vision Examination (PhD CIFRE)

Co-supervision with E. Tartaglia

Oct. 2025 - present

Jules Gomel

M2 IN NEUROENGINEERING AND SIGNAL PROCESSING (ISAE-SUPAERO, FRANCE)

Neurodecoding - Neuromarkers of Information Integration [G.3]

Co-supervision with F. Dehais

June 2025 - present

Cassandra Dumas

MÈNG IN BIOTECHNOLOGIES & INNOVATIONS IN NEUROSCIENCES, (PSL, FRANCE)

Characterization of the spatial signatures of β sensorimotor rhythms for the neurofeedback [D.1, C.3, D.5, D.8, D.2]

Co-supervision with N. George

June 2024 - present

Camilla Mannino

M2 IN BIONICS ENGINEERING (UNIV. OF PISA, ITALY)

Neuronal avalanches as a tool to improve Brain-Computer Interfaces [G.2, G.6, D.4, C.2, C.2, C.6, D.16, D.17]

Co-supervision with M. Chavez

Nov. 2023 - present

Sébastien Velut

MÈNG IN AEROSPACE, AERONAUTICAL AND SPACE ENGINEERING (ISAE SUPAERO, FRANCE)

Variability inter user in passive and active BCI [C.5, B.3]

Co-superv. with S. Chevallier & F. Dehais

Nov. 2023 - present

Bruno Aristimunha

M2 IN COMPUTATIONAL NEUROSCIENCE AND DATA MINING (UNIV. OF ABC, BRAZIL)

Learning Structure In Electroencephalogram Using Deep Learning [B.8, D.14, D.27, D.26]

Co-superv. w/ S. Chevallier & R. Camargo

March 2023 - Feb. 2026

Engineers

Morgane Marzulli

MASTER'S DIPLOMA IN BIOMEDICAL ENGINEERING (UNIVERSITÉ PARIS CITÉ, ESPCI, ENSAM)

Real-time computation of functional connectivity estimators for BCIs

Feb 2026 - present

Arthur Desbois

MASTER'S DIPLOMA IN ENGINEERING IN SIGNAL PROCESING (ESIEE PARIS, FRANCE)

Developer of HappyFeat - An interactive and efficient BCI framework for clinical applications [B.13, D.24, D.31, D.40]

March 2020 - present

Master Theses

Pierre-Baptiste Mathieu de Carvalho

M2 IN COGNITIVE SCIENCES (UNIV. LORRAINE)

Identification of neurophysiological markers of attention and engagement [D.6]

Co-supervised with L. Bougrain

April. - Sept. 2025

Mario Roca

M2 IN COMPUTATIONAL NEUROSCIENCES AND NEUROENGINEERING (UNIV. PARIS-SACLAY)

Development of interpretable neurophysiological tools for differential diagnosis [G.1]

Feb. - Aug. 2025

Rune Frateur

M2 IN COMPUTATIONAL NEUROSCIENCES AND NEUROENGINEERING (UNIV. PARIS-SACLAY)

Optimization of classification algorithms for multimodal data from brain-computer interfaces [D.23]

Jan. - June 2023

Linda Ek-Fliesberg

M2 IN "BIOENGINEERING AND INNOVATION IN NEUROSCIENCES" (ESPCI-UNIV. PARIS DESCARTES)

Neuronal avalanches as alternative features for BCI [D.22]

Feb. - June 2023

Camile Bousfiha

MEDICAL STUDENT AND MSC IN "BIOENGINEERING AND INNOVATION IN NEUROSCIENCES" - ESPCI-UNIV. PARIS DESCARTES

Identification of neurophysiological markers of post-stroke functional recovery: a longitudinal study for the design of innovative BCI

Feb. - Sept. 2022

Nessim Richard

MSC IN "BIOENGINEERING AND INNOVATION IN NEUROSCIENCES" - ESPCI-UNIV. PARIS DESCARTES

Optimization of a pipeline dedicated to the preprocessing and the analysis of EEG data

Feb. - July 2021

Juliana Gonzalez-Astudillo

MSC IN "MECHATRONIC SYSTEMS FOR REHABILITATION" - SORBONNE UNIVERSITÉ

Software development for BCI and then as a PhD student to identify brain network-based BCI features [B.21, D.42, D.45, D.46]

Apr. - July 2018

Thomas Campbell Arnold

MSC IN BIOMEDICAL ENGINEERING - UNIV. OF PENNSYLVANIA, USA

Identification of graph theory metrics as potential BCI features - co-supervised with D. Bassett

May.-Sept. 2018

Tiziana Cattai

MSC IN BIOMEDICAL ENGINEERING, SAPIENZA UNIVERSITY, ROME, ITALY

Brain connectivity BCI - co-supervised with G. Scarano and F. De Vico Fallani [B.19, B.17, C.12, C.13]

March. - June 2017

Oriana Peltzer and Alice Chavanne-Arod

MSC IN BIOMEDICAL ENGINEERING - RESP. ENSAM AND ENS CACHAN

Protocol setup using a motor-imagery based BCI for parkinsonian patients - co-supervised with N. George, B. Lau and F. De Vico Fallani

June - July 2017

Bachelor's thesis internship

Apurba Debnath

BSC IN COMPUTATIONAL NEUROSCIENCE (INDIAN INSTITUTE OF TECHNOLOGY, MADRAS, INDIA)

Biophysical modeling approach to elucidate the underlying neural mechanisms in Brain-Computer Interface training [G.7, D.3]

Co-supervised with P. Verma

Jan. - July 2025

Dmytro Klepachevskyi

BSC IN COMPUTER SCIENCE (VYTAUTAS MAGNUS UNIVERSITY, LITHUANIA)

Development of a pipeline for automated differential diagnosis in neurodegenerative diseases [B.2, G.1]

Co-supervised with P. Sorrentino

Feb. - June 2024

Cléo Perrin

L2 IN "FRONTIÈRES DU VIVANT" - UNIV. PARIS DESCARTES

Development of a pipeline to compare functional connectivity metrics from different processing toolboxes

June-July 2022

Software development and management

HappyFeat

AN INTERACTIVE AND EFFICIENT BCI FRAMEWORK FOR CLINICAL APPLICATIONS

Supervision

Pyriemann

BIO SIGNALS CLASSIFICATION WITH RIEMANNIAN GEOMETRY - TUTORIAL PAGE 

Contributor

FUCONE

FUNCTIONAL CONNECTIVITY ENSEMBLE METHOD TO ENHANCE BCI PERFORMANCE

Co-creator

RIGOLETTO

RIEMANNIAN GEOMETRY LEARNING APPLICATION TO CONNECTIVITY IN STROKE

Co-creator

Scientific commitments

Participation to recruitment juries

2026	Jury member , Assistant professor competitive recruitment procedure - IMT Mines Alès	Alès
2025	Jury member , Permanent researcher competitive recruitment procedure of the Inria Bordeaux (CRCN)	Talence
2024	Jury member , Assistant professor competitive recruitment procedure - University of Paris-Saclay (COS 27)	Saclay
2024	Admission jury member , Permanent researcher competitive recruitment procedure at Inria (CRCN)	Paris

Participation to PhD juries

2025	PhD jury member - Ambroise Heurtebise , supervised by P. Ablin, & A. Gramfort	Saclay
2025	PhD jury member - Hasnae Agouram , supervised by E. Daucé, & P. Sorrentino	Marseille
2025	PhD jury member - Edouard Ferrand , supervised by L. Estebanez	Saclay
2025	PhD jury member - Alix Lamouroux , supervised by P. Maurel, J. Coloigner, G. Lioi & N. Farrugia	Brest
2025	PhD jury member - Hanane Moumane , supervised by M. Valderrama & M. Le Van Quyen	Paris
2025	PhD jury member - Zaineb Ajra , supervised by G. Dray, B. Xu, S. Perrey & J. Montmain	Montpellier
2024	PhD jury member - Luna Angelini , supervised by B. Rossion & J. Jonas	Nancy
2024	PhD jury member - Juan Jesus Torre Tresols , supervised by F. Dehais & C. P.C. Chanel	Toulouse
2024	PhD jury member - Igor Carrara , supervised by T. Papadopoulos	Sophia Antipolis
2023	PhD jury member - Alexandre Bleuzé , supervised by M. Congedo & Jérémie Mattout	Grenoble

Participation to Individual Monitoring Committees (CSI)

2026	Jury member - Intermediate Defense - Yingqi Huang , superv. by T. Ros & S. Vulliémoz	Virtual
2024-	CSI member - Camille Des Lauriers , superv. by J.-J. Aucouturier, M. Gavaret & A. Llorens	Virtual
2024-	CSI member - Valérie Marissens Cueva , superv. by L. Bougrain, S. Rimbert & F. Lotte	Virtual
2023-24	CSI member - Laure Tabouy , superv. by L. Coutellec & J.-P. Cobbaut	Paris
2023-25	CSI member - Hafid Sid-Ahmed , superv. by V. Brun & V. Auboiron	Grenoble
2023-24	CSI member - Alix Lamouroux , superv. by N. Farrugia & P. Maurel - France	Virtual
2023	CSI member - Apolline Mellot , superv. by A. Gramfort & D. Engemann	Virtual

Students mentorship

2024	Designated teacher for MSc internships , T. de Charrin, N. Cecchi, B. Lhopitallier	Saclay
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Teaching

Imagerie fonctionnelle cérébrale et interface cerveau machine (12h) MASTER MATHÉMATIQUES VISION APPRENTISSAGE (MVA)	ENS Paris-Saclay 2024-
Introduction to Brain-Computer Interfaces (1h) DU IA-SANTÉ	Univ. Paris-Cité 2021-
Network science for understanding Brain-Computer Interfaces (3h) MASTER COMPUTATIONAL NEUROSCIENCE AND NEUROENGINEERING	Univ. Paris-Saclay 2021-
69 - Neurosciences section MCF QUALIFICATION - 20269341499	2020
Introduction to BCI (2h) COURS DU CENIR	Paris Brain Institute 2017-

Societies

2025-	CuttingEEG , Scientific advisory board member	Worldwide
2019-	CORTICO - French BCI Society , Board member, formerly Secretary general (2019-2023)	France
2022-23	Postdocs and Students committee of the BCI Society , Co-chair	Worldwide
2018-	BCI Society , Member	Worldwide
2022-	Organization for Computational Neuroscience - OCNS , Member	Worldwide
2019-	Organization for Human Brain Mapping - OHBM , Member	Worldwide
2022-	Federation of European Neuroscience Societies - FENS , Member	Worldwide
2022-	Société des Neurosciences , Member	France

Scientific initiatives to promote open-science

2026-	EEG101 COST Action , Community Engagement Lead 	Worldwide
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Editorial activities

Journals - PLOS ONE (Academic Editor)

Reviewing

Journals - eNeuro, NeuroImage: Clinical, Brain Topography, Brain Connectivity, Journal of Neural Engineering, IEEE Transactions on Biomedical Engineering (TBME), IEEE Reviews in Biomedical Engineering, Phychophysiology, Frontiers in Human Neuroscience, Frontiers in Neuroergonomics, Scientific Reports, PLOS ONE, Sensors, Int. Journal of Neural Systems, Brain-Computer Interfaces, Epilepsy Open, IOP Biomed. Phys. Eng. Express, Electronics

Conferences - Graz BCI meeting (2026), NeurIPS (2025), MetroXRaine (2025), Neuroergonomics (2024), BCI meeting (2025, 2023), CORTICO days (2022-)

Grants - Doctoral project for the LabEx GIMeD (2026), Data IA Institute: AI Modular Chairs (2025), Dutch Research Council (2025), ICM Carnot Tools/Maturation (2025-), Toulouse Initiative for Research's Impact on Society (2025), ANR PRME (2024), INCA grant for the clinical neuroscience institute of Rennes (2024), ANR PRCE (2023)

Professional training followed

Posture Managériale

PI MENTORING

Paris Brain Institute

2026

Intégrité scientifique

PI MENTORING

Paris Brain Institute

2023

Management/les bases du Management

PI MENTORING

Paris Brain Institute

2023

Gestion de projets & Encadrement de thèse

PI MENTORING

Paris Brain Institute

2023

Data Management Plan

PI MENTORING

Paris Brain Institute

2023

Statut des fonctionnaires

PI MENTORING

Inria Paris

2023

Outreaching

Paris Brain Institute

BECOMING A PI AT INRIA

Paris, France

Nov, 2025

Institut de la gestion publique et du développement économique (IGPDE)

INTERFACES CERVEAU-MACHINE

Paris, France

Oct, 2025

Spring School 2025: How can emotionally intelligent AI transform society?

PRESENTATION OF THE CURRENT RESEARCH ON BRAIN-COMPUTER INTERFACES

AI Grid and SCAI

2025

France Brain Bee

ORGANIZING COMMITTEE

Paris Brain Institute

2025

Les Mardis de la Sorbonne

LES INTERFACES CERVEAU-MACHINE

Sorbonne Université

Jan 2025

USA/France FADEX 2025 - Neuro.AI

NETWORK NEUROSCIENCE FOR BRAIN-COMPUTER INTERFACES

Paris Brain Institute

Jan 2025

Olympiades de Neurosciences

PRESENTATION OF MY CAREER PATH AND MY RESEARCH PROJECTS TO HIGH SCHOOL STUDENTS

Paris Brain Institute

March 2024

Roundtable on "the way forward for neurotechnology governance"

EVENT IN LINE WITH "THE RISKS AND CHALLENGES OF NEUROTECHNOLOGIES FOR HUMAN RIGHTS", CO-EDITED WITH UNESCO

Univ. of Milano-Bicocca

Dec 2022

STARE program

16 H. OF MEDICAL STUDENTS MENTORING

Paris Brain Institute

2021

Aramis group meeting organizer

WEEKLY EVENT, >30 PARTICIPANTS

Paris Brain Institute

2018-2021

RDV des Jeunes Mathématiciennes et Informaticiennes 2021

PRESENTATION OF CAREERS IN COMPUTING AND MATHEMATICS

Virtual

2021

Fête de la science

PRESENTATION OF THE ARAMIS TEAM-PROJECT & NEUROIMAGING PLATFORM ACTIVITIES

Paris

2016 & 2017

Semaine du cerveau

BCI WORKSHOP ORGANIZATION FOR HIGH SCHOOL STUDENTS

Salon Jeux et mathématiques

PRESENTATION OF THE ARAMIS TEAM-PROJECT ACTIVITIES

Paris Brain Institute

2017

Paris

2016

Marie-Constance Corsi

LIST OF PUBLICATIONS

NERV Lab, Paris Brain Institute (ICM)

Hôpital de la Pitié-Salpêtrière, 47, boulevard de l'Hôpital, 75013 Paris, France

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A. Book chapters

- A.1. Vourvopoulos, A., Kostoglou, K., **Corsi, M.-C.**, Chevallier, S., Eder, M., Mattersberger, M., Žák, M.R., Grosse-Wentrup, M., Lotte, F., Daly, I., & Papadopoulo, T. (2026). Methods for brain-computer interfacing. In: "Brain-Computer Interfaces: An educational and research textbook" edited by A. Vourvopoulos & S. Perdikis. In Press - doi.org/10.1088/978-0-7503-5914-6ch4.
- A.2. **Corsi, M.-C.**, Llorens, A. (2025). Signal processing for brain signals. In: "Neural Interfaces" edited by D. Valeriani & T. Vaughan. In Press - doi.org/10.1016/B978-0-443-24824-5.00016-8.
- A.3. **Corsi, M.-C.** (2023). Electroencephalography and Magnetoencephalography. In: "Machine learning for brain diseases" edited by O. Colliot. In Press - doi.org/10.1007/978-1-0716-3195-9_9.

B. International journal publications

*Co-first author or co-last author; names of collaborators I (co-)supervised are underlined.

- B.1. Troisi Lopez, E., Minino, R., De Luca, M., Tafuri, F., Sorrentio, G., Sorrentino, P., & **Corsi, M.-C.** (2025). Artificial Intelligence for automatic movement recognition: a network-based approach. *Array* - doi.org/10.1016/j.array.2026.100857
- B.2. Klepachevskyi, D., Romano, A., Aristimunha, B., Angiolelli, M., Trojsi, F., Sorrentino, G., Andreone, V., Minino, R., Troisi Lopez, E., Polverino, A., Jirsa, V., Saudargiene, A., **Corsi, M.-C.***, & Sorrentino, P.* (2026). Magnetoencephalography-based interpretable automated differential diagnosis in neurodegenerative diseases. *Heliyon* - doi.org/10.1016/j.heliyon.2026.e44559
- B.3. Velut, S., Thielen, J., Chevalier, S., **Corsi, M.-C.**, & Dehais, F. (2026). Neurophysiological screening of individual variability for robust decoding in c-VEP-based BCI. *Imaging Neuroscience* - doi.org/10.1162/IMAG.a.1172

- B.4. Candia-Rivera, D., Chavez, M., De Vico Fallani, F., & **Corsi, M.-C.** (2026). Motor imagery learning is signaled by a functional disconnection of a cardiac-cortico-cerebellar circuit. *NeuroImage* - doi.org/10.1016/j.neuroimage.2026.121804
- B.5. Cattai, T., Scarano, G., **Corsi, M.-C.**, De Vico Fallani, F., Colonnese, S. (2025). Community Detection from Multiple Observations: from Product Graph Model to Brain Applications. *IEEE Transactions on Signal and Information Processing over Networks* - doi.org/10.1109/TSIPN.2025.3540702
- B.6. Ben Messaoud, R., Le Du V, Bousfiha, C., **Corsi, M.-C.**, Gonzalez-Astudillo, J., Kaufmann, B., Venot, T., Couvy-Duchesne, B., Migliaccio, L., Rosso, C., Bartolomeo, P., Chavez, M., De Vico Fallani, F. (2025) Low-dimensional controllability of brain networks. *PLOS Computational Biology* - doi.org/10.1371/journal.pcbi.1012691
- B.7. Troisi-Lopez, E*, **Corsi, M.-C.***, Danieli, A., Antoniazzi, L., Angiolelli, M., Bonanni, P., Sorrentino, P., & Duma, G.M. (2024). Dynamic reconfiguration of aperiodic brain activity supports cognitive functioning in epilepsy: a neural fingerprint identification. *iScience* - doi.org/10.1016/j.isci.2024.111497
- B.8. Carrara, I*, Aristimunha, B.*, **Corsi, M.-C.**, de Camargo, R., Chevallier, S., Papadopoulo, T. (2024). Geometric Neural Network based on Phase Space for BCI decoding. *JNE* - doi.org/10.1088/1741-2552/ad88a2
- B.9. **Corsi, M.-C.***, Troisi-Lopez, E.* Sorrentino, P., Danieli, A., Cuozzo, S., Bonanni, P., Duma, G.M. (2024). Neuronal avalanches in temporal lobe epilepsy as a noninvasive diagnostic tool investigating large scale brain dynamics. *Scientific Reports* - doi.org/10.1038/s41598-024-64870-3
- B.10. Venot, T., Desbois, A., **Corsi, M.-C.**, Saint-Bauzel, L., De Vico Fallani, F., (2024). Intentional binding enhances hybrid BCI control. *Journal of Neural Engineering* - doi.org/10.1088/1741-2552/ad628c
- B.11. Presigny, C., **Corsi, M.-C.**, & De Vico Fallani, F. (2024). Topological duality of multilayer networks. *Nature Communications* - doi.org/10.1038/s41467-024-50176-5
- B.12. **Corsi, M.-C.***, Sorrentino, P*, Chavez, M., Schwartz, D., George, N., Gollo, L., Chevallier, S., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. (2023). Measuring Neuronal Avalanches to inform Brain-Computer Interfaces. *iScience* - doi.org/10.1016/j.isci.2023.108734
- B.13. Desbois, A., Venot, T., De Vico Fallani, F., **Corsi, M.-C.** (2023). HappyFeat – An interactive and efficient BCI framework for clinical applications. *Software Impacts* - doi.org/10.1016/j.simpa.2023.100610
- B.14. Sorrentino, P., Troisi Lopez, E., Romano, A., Granata, C., **Corsi, M.-C.**, Sorrentino, G., & Jirsa, V. (2023) Brain fingerprint is based on the aperiodic, scale-free, neuronal activity. *NeuroImage* - doi.org/10.1016/j.neuroimage.2023.120260
- B.15. **Corsi, M.-C.**, Chevallier, S., De Vico Fallani, F. & Yger, F. (2022) Functional connectivity ensemble method to enhance BCI performance (FUCONE). *IEEE Transactions on Biomedical Engineering* - doi.org/10.1109/TBME.2022.3154885
- B.16. Chevallier, S., **Corsi, M.-C.**, Yger, F., & De Vico Fallani, F. (2022) Riemannian geometry for combining functional connectivity metrics and covariance in BCI. *Software Impacts* - doi.org/10.1016/j.simpa.2022.100254.
- B.17. Cattai, T., Scarano, G., **Corsi, M.-C.**, Bassett, D. S., De Vico Fallani, F & Colonnese, S. (2021). Improving J-divergence of brain connectivity states by graph Laplacian denoising. *IEEE Transactions on Signal and Information Processing over Networks* - doi.org/10.1109/TSIPN.2021.3100302
- B.18. Gaubert, S., Houot, M., Raimondo, F., Ansart, M., **Corsi, M.-C.**, Naccache, L., Sitt, J.D., Habert, M.-O., Dubois, B., De Vico Fallani, F. Durrleman, S., & Epelbaum, S (2021). A machine learning approach to screen for preclinical Alzheimer’s disease. *Neurobiology of Aging*. - doi.org/10.1016/j.neurobiolaging.2021.04.024
- B.19. Cattai, T., Colonnese, S., **Corsi, M.-C.**, Bassett, D. S., Scarano, G., & De Vico Fallani, F (2021). Phase/amplitude synchronization of brain signals during motor imagery BCI tasks. *IEEE Transactions on Neural Systems and Rehabilitation Engineering* - doi.org/10.1109/TNSRE.2021.3088637
- B.20. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. (2021) BCI learning induces core-periphery reorganization in M/EEG multiplex brain networks. *Journal of Neural Engineering* - doi.org/10.1088/1741-2552/abef39

- B.21. Gonzalez-Astudillo, J., Cattai, T., Bassignana, G., Corsi, M.-C., & De Vico Fallani, F. Network-based brain computer interfaces: principles and applications. (2020) *Journal of Neural Engineering* - doi.org/10.1088/1741-2552/abc760
- B.22. Stiso, J., **Corsi, M.-C.**, Garcia, J. O., Vettel, J. M., De Vico Fallani, F., Lucas, T. H., & Bassett, D. S. (2020) Learning in brain-computer interface control evidenced by joint decomposition of brain and behavior. *Journal of Neural Engineering* - doi.org/10.1088/1741-2552/ab9064
- B.23. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F., (2020) Functional disconnection of associative cortical areas predicts performance during BCI training. *NeuroImage* - doi.org/10.1016/j.neuroimage.2019.116500
- B.24. Gaubert, S., Raimondo, F., Houot, M., **Corsi, M.-C.**, Naccache, L., Diego Sitt, J., ... & Younsi, N. (2019) EEG evidence of compensatory mechanisms in preclinical Alzheimer's disease. *Brain* - doi.org/10.1093/brain/awz150
- B.25. **Corsi, M.-C.**, Chavez, M., Schwartz, D., Hugueville, L., Khambhati, A. N., Bassett, D. S., & De Vico Fallani, F. Integrating EEG and MEG signals to improve motor imagery classification in brain-computer interface. (2018) *International Journal of Neural Systems* - doi.org/10.1142/S0129065718500144
- B.26. Labyt, E.*, **Corsi, M.-C***, Fourcault, W., Palacios Laloy, A., Bertrand, F., Lenouvel, F., Cauffet, G., Le Prado, M., Berger, F., & Morales, S. Magnetoencephalography with optically pumped 4He magnetometers at ambient temperature. (2018) *IEEE Transactions on Medical Imaging* - doi.org/10.1109/TMI.2018.2856367
- B.27. Morales*, S., **Corsi, M.-C***, Fourcault, W., Bertrand, F., Cauffet, G., Gobbo, C. F., Alcouffe, F., Lenouvel, F., Le Prado, M., Berger, F., Vanzetto, G., & Labyt, E. Magnetocardiography measurements with 4He vector optically pumped magnetometers at room temperature. (2017) *IOP Physics in Medicine and Biology* - doi.org/10.1088/1361-6560/aa6459

C. Conferences with full-length peer-reviewed proceedings

*Co-first author or co-last author; names of collaborators I (co-)supervised are underlined.

- C.1. De Surrel De Saint Julien, T., Venot, T, **Corsi, M.-C**, Yger, F. Interpretability of Riemannian tools used in Brain Computer Interfaces. 2025. 35th IEEE International Workshop on Machine Learning for Signal Processing (IEEE MLSP 2025) - Decoding the brain time series special session - hal.science/hal-05245110/document
- C.2. Marissens Cueva, V., Mannino, C., **Corsi, M.-C**, Lotte, F., Rimbart, S., Bougrain, L. Riemannian fusions of EEG-based Features for Motor Imagery Detection under Propofol Sedation. 2025. 35th IEEE International Workshop on Machine Learning for Signal Processing (IEEE MLSP 2025) - Decoding the brain time series special session
- C.3. Dumas, C., **Corsi, M.-C**, Dussard, C., Grosselin, F. & George, N. Automatic Ocular Artifact Correction in Electroencephalography for Neurofeedback. 2025. 18th International Conference on Bio-inspired systems and signal processing (BioSignals) - hal.science/ICM/hal-04975734v1
- C.4. Cattai, T., Caporali, C., **Corsi, M.-C**, & Colonnese, S. Introducing the modularity graph: an application to brain functional networks. 2024 32th European Signal Processing Conference (EUSIPCO) - inria.hal.science/hal-04895016
- C.5. Velut, S., Chevalier, S., **Corsi, M.-C**, & Dehais, F. Deep Riemannian Neural Architectures for Domain Adaptation in Burst cVEP-based Brain Computer Interface. 2024. 32th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning (ESANN) - hal.science/hal-04720928/document
- C.6. Mannino, C., Sorrentino, P., Chavez, M., & **Corsi, M.-C**. Neuronal avalanches for EEG-based motor imagery BCI. 9th Graz Brain-Computer Interface Conference 2024 - cstb.hal.science/INS/hal-04698548v1
- C.7. Venot, T., Desbois, A., **Corsi, M.-C.**, Hugueville, L., Saint-Bauzel, L., & De Vico Fallani, F., Exploring Strategies for Multimodal BCIs in an Enriched Environment, 2022 IEEE International Workshop on Metrology for eXtended Reality, Artificial Intelligence and Neural Engineering - IEEE MetroXRINE 2022 - doi.org/10.1109/MetroXRINE54828.2022.9967624

- C.8. Cattai, T., Scarano, G., **Corsi, M.-C.**, De Vico Fallani, F., & Colonnese, S. EEG as Signal on Graph: a Multilayer Network model for BCI applications. 2022 30th European Signal Processing Conference (EUSIPCO) - ieeexplore.ieee.org/document/9909871
- C.9. Venot, T., **Corsi, M.-C.**, Saint-Bauzel, L., De Vico Fallani, F., Towards multimodal BCIs: the impact of peripheral control on motor cortex activity and sense of agency, 2021 IEEE Engineering in Medicine & Biology Society (EMBC). - doi.org/10.1109/EMBC46164.2021.9630021
- C.10. **Corsi, M.-C.**, Yger, F., Chevallier, S., & Noûs, C., Riemannian geometry on connectivity for clinical BCI, IEEE International Conference on Acoustics, Speech and Signal Processing 2021 - doi.org/10.1109/ICASSP39728.2021.9414790 (2021 acceptance rate: 48%)
- C.11. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F., Looking for cortical patterns of successful motor imagery-based BCI learning, 8th Graz BCI Conference 2019 - doi.org/10.3217/978-3-85125-682-6-04
- C.12. Cattai, T., Colonnese, S., **Corsi, M.-C.**, Bassett, D. S., Scarano, G., & De Vico Fallani, F., Combination of connectivity and spectral features for motor-imagery BCI, 8th Graz BCI Conference 2019 - doi.org/10.3217/978-3-85125-682-6-32
- C.13. Cattai, T., Colonnese, S., **Corsi, M.-C.**, Bassett, D. S., Scarano, G., & De Vico Fallani, F. Characterization of Mental States through Node Connectivity between Brain Signals. 2018 26th European Signal Processing Conference (EUSIPCO) 2018, 1377-1381 - doi.org/10.23919/EUSIPCO.2018.8553000

D. Conference abstracts (accepted)

*Co-first author or co-last author; names of collaborators I (co-)supervised are underlined.

- D.1. Dumas, C., Dussard, C., George, N.*, & **Corsi, M.-C.***. "Physiological Relevance and Temporal Stability of Common Spatial Patterns in Motor Imagery Neurofeedback". 1st EBRAINS Student Conference on Interdisciplinary Brain Research - Nice, France, 2026 - <https://hal.science/hal-05567808> (oral & poster presentation)
- D.2. Dumas, C., Dussard, C., George, N.*, & **Corsi, M.-C.***. "Characterization and Usability of Common Spatial Pattern Features in Motor Imagery Neurofeedback". Journées "Brain Insights into Memory and Consciousness" - Société de Psychophysiologie et Neurosciences Cognitives - SPNC 2025, Paris, France, 2025 - hal.sorbonne-universite.fr/ICM/hal-05366284v1 (oral presentation)
- D.3. Debnath, A., **Corsi, M.-C.***, & Verma, P.* "A biophysical model to infer neural mechanisms of Motor Imagery in Brain-computer Interface training", Annual Meeting of the Organization for Human Brain Mapping (OHBM), Brisbane, Australia, 2025 (poster presentation)
- D.4. Mannino, C., Sorrentino, P., Chavez, M., & **Corsi, M.-C.** "Neurophysiologically-guided optimization of neuronal avalanches for BCI", 11th BCI meeting, Banff, Canada, 2025 (poster presentation & oral presentation during a master class)
- D.5. Dumas, C., George, N.*, & **Corsi, M.-C.***. "Challenges in Common Spatial Pattern Reliability for Neurofeedback". 11th BCI meeting, Banff, Canada, 2025 - hal.science/hal-05085596v1/file/Poster_BCI_Meeting_2025_Cassandra_Dumas.pdf (poster presentation & oral presentation during a master class)
- D.6. Mathieu de Carvalho, P.B., **Corsi, M.-C.** & Bougrain, L. "A Protocol for Measuring Learner Attention and Engagement". CORTICO Days, Lyon, France, 2025 - hal.science/LORIA-AIS/hal-05125580v1 (poster presentation)
- D.7. de Surrel, T., Venot, T., **Corsi, M.-C.**, & Yger, F., "Interpretability of Riemannian tools used in Brain-Computer Interfaces". CORTICO Days, Lyon, France, 2025 - univ-paris-dauphine.hal.science/hal-05245110v1 (poster presentation)
- D.8. Dumas, C., George, N.*, & **Corsi, M.-C.***. Exploring the Variability of Common Spatial Patterns in Motor Imagery Neurofeedback. CORTICO Days, Lyon, France, 2025 - hal.science/ICM/hal-05078067v1 (oral presentation)

- D.9. Venot, T., Bousfiha, C., De Vico Fallani, F., & **Corsi, M.-C.**, "Investigating evolution of features in Brain Computer Interface experimentation for robustness", SFN 2024 - Annual meeting of the Society for Neuroscience, Chicago, United States, 2024 - hal.science/hal-04890567v1
- D.10. Troisi-Lopez, E., Minino, R., Romano, A., **Corsi, M.-C.**, Sorrentino, P., Sorrentino, G., "One step towards gait-based Parkinson's disease classification", 24th National Congress of SIAMOC, Stresa, Italy, October 2024 - www.sciencedirect.com/science/article/pii/S096663622400590
- D.11. Verma, P., & **Corsi, M.-C.**, "Biophysical modeling to inform performance in motor imagery-based Brain-Computer Interfaces", BIOMAG, Sydney, Australia, 2024 - inria.hal.science/hal-04701082 (poster & lightning talk presentation)
- D.12. Mannino, C., Sorrentino, P., Chavez, M., & **Corsi, M.-C.**, "Neuronal avalanches for EEG-based motor imagery BCI", 9th Graz Brain-Computer Interface Conference 2024, Graz, Austria, 2024 (oral presentation)
- D.13. Verma, P., & **Corsi, M.-C.**, "Biophysical modeling to inform performance in motor imagery-based Brain-Computer Interfaces", Computational Neuroscience meeting, Natal, Brazil, 2024 - inria.hal.science/hal-04701021 (poster presentation)
- D.14. Aristimunha, B., de Camargo, R., Moreau, T., Chevallier, S., & **Corsi, M.-C.**, "What is the best model for decoding neurophysiological signals? Depends on how you evaluate", Computational Neuroscience meeting, Natal, Brazil, 2024 - inria.hal.science/hal-04743845v1 (poster presentation)
- D.15. **Corsi, M.-C.***, Sorrentino, P.*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. "Neuronal avalanches as potential features for Brain-Computer Interfaces", Annual Meeting of the Organization for Human Brain Mapping (OHBM), Seoul, South Korea, 2024 - inria.hal.science/hal-04701010 (poster presentation)
- D.16. Mannino, C., Sorrentino, P., Chavez, M., **Corsi, M.-C.**, "Neuronal avalanches for EEG-based motor imagery BCI: robustness of classification performance & validity of feature selection", CORTICO Days, Nancy, France, 2024 - hal.science/hal-04621936v1 (poster presentation)
- D.17. Mannino, C., Sorrentino, P., Chavez, M., **Corsi, M.-C.**, "The potential of neural avalanches to design innovative sensorimotor-based brain-computer interface", 33rd Annual Meeting of the Society for the Neural Control of Movement (NMC), Dubrovnik, Croatia, 2024 - inria.hal.science/hal-04621883 (poster presentation)
- D.18. **Corsi, M.-C.***, Sorrentino, P.*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. "Neuronal avalanches differentiate Parkinson disease patients and healthy controls", Annual Meeting of the Organization for Human Brain Mapping (OHBM), Montréal, Canada, 2023 (poster presentation)
- D.19. **Corsi, M.-C.**, Chevallier, S., De Vico Fallani, F., & Yger, F., "Empirical evaluation on multiple BCI datasets of the functional connectivity ensemble (FUCONE) method", BCI meeting 2023, Sonian Forest, Belgium, 2023 (poster presentation)
- D.20. Venot, T., Desbois, A., **Corsi, M.-C.**, Hugueville, L., Saint-Bauzel, L., De Vico Fallani, F. "Investigating the proper time to perform the motor imagery task in a multimodal BCI", BCI meeting 2023, Sonian Forest, Belgium, 2023 (poster presentation)
- D.21. **Corsi, M.-C.***, Sorrentino, P.*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. "Measuring Neuronal Avalanches to inform Brain-Computer Interfaces", NeuroFrance meeting, Lyon, France, 2023 (oral presentation)
- D.22. Ek-Fliesberg, L., Sorrentino, P., & **Corsi, M.-C.**, "Neuronal avalanches as alternative features for motor imagery-based brain-computer interface", Journées CORTICO 2023, Paris, France (poster presentation)
- D.23. Frteur, R., Chevallier, S., Yger, F., & **Corsi, M.-C.**, "Dimensionality Reduction and Frequency Bin Optimization To Improve a Riemannian-based Classification Pipeline", Journées CORTICO 2023, Paris, France (poster presentation)
- D.24. Desbois, A., Venot, T., **Corsi, M.-C.**, & De Vico Fallani, F., "HappyFeat: A Python-based framework for the efficient handling of MI BCI protocols", Journées CORTICO 2023, Paris, France (poster presentation)

- D.25. Venot, T., Desbois, A., **Corsi, M.-C.**, Hugueville, L., Saint-Bauzel, L., & De Vico Fallani, F. "Investigating the proper time to perform the motor imagery task in a multimodal BCI", Journées CORTICO 2023, Paris, France (poster presentation)
- D.26. Carrara, I., Aristimunha, B., Chevallier, S., **Corsi, M.-C.**, & Papadopoulo, T., "Holographic EEG: multi-view deep learning for BCI", Journées CORTICO 2023, Paris, France (poster presentation)
- D.27. Aristimunha, B., de Camargo, R.Y., Pinaya, W.H.L., Yger, F., **Corsi, M.-C.**, & Chevallier, S., "CONCERTO: Coherence & Functional Connectivity Graph Network", Journées CORTICO 2023, Paris, France (poster presentation)
- D.28. **Corsi, M.-C.**, Chevallier, S., De Vico Fallani, & Yger, F., "Ensemble of Riemannian classifiers for multimodal data: FUCONE approach for M/EEG data", IEEE ISBI, Cartagena, Colombia, 2023 (oral and poster presentation)
- D.29. **Corsi, M.-C.***, Sorrentino, P*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. "Informing motor imagery-based brain-computer interface via neuronal avalanches", IEEE ISBI, Cartagena, Colombia, 2023 (poster presentation)
- D.30. Venot, T., Desbois, A., **Corsi, M.-C.**, Hugueville, L., Saint-Bauzel, L., & De Vico Fallani, F., Exploring Strategies for Multimodal BCIs in an Enriched Environment, 2022 IEEE International Workshop on Metrology for eXtended Reality, Artificial Intelligence and Neural Engineering - IEEE MetroXRINE 2022.
- D.31. Desbois, A., Venot, T., **Corsi, M.-C.**, & De Vico Fallani, F. "HappyFeat, an interactive and efficient BCI Framework for clinical applications", MetroXRINE 2022 - IEEE International conference on metrology for extended reality, artificial intelligence and neural engineering, Rome, Italy, 2022 (demonstration presentation)
- D.32. **Corsi, M.-C.***, Sorrentino, P*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. "Exploiting brain critical dynamics to inform Brain-Computer Interfaces performance", Brain criticality meeting, Bethesda, MD, USA & virtual, 2022 (oral presentation)
- D.33. **Corsi, M.-C.***, Sorrentino, P*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V., & De Vico Fallani, F. "Exploiting brain critical dynamics to inform Brain-Computer Interfaces performance", CNS, 31st Annual Computational Neuroscience Meeting, Melbourne, 2022 (oral presentation)
- D.34. Sorrentino, P*, **Corsi, M.-C.***, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., De Vico Fallani, F., & Jirsa, V. "Exploiting brain critical dynamics to inform Brain-Computer Interfaces", BIOMAG, Birmingham, United Kingdom, 2022 (poster presentation)
- D.35. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "M/EEG networks integration to elicit patterns of motor imagery-based BCI training", BIOMAG, Birmingham, United Kingdom, 2022 (poster presentation)
- D.36. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Functional connectivity predicts MI-based BCI learning", BIOMAG, Birmingham, United Kingdom, 2022 (poster presentation)
- D.37. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "M/EEG networks integration to elicit patterns of motor imagery-based BCI training", Federation of European Neuroscience Societies (FENS) meeting 2022, Paris, 2022 (poster presentation) -
- D.38. Sorrentino, P*, **Corsi, M.-C.***, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V*, & De Vico Fallani, F*, "Neuronal avalanches differentiate resting-state and task conditions in Brain-Computer Interfaces", Federation of European Neuroscience Societies (FENS) meeting 2022, Paris, 2022 (poster presentation)
- D.39. **Corsi, M.-C.***, Sorrentino, P*, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., Jirsa, V*, & De Vico Fallani, F*, "Neuronal avalanches differentiate resting-state and task conditions in Brain-Computer Interfaces", Annual Meeting of the Organization for Human Brain Mapping (OHBM), Glasgow, 2022 (poster presentation)
- D.40. Desbois, A., Cattai, T., **Corsi, M.-C.**, & De Vico Fallani, F. "An OpenViBE Python-based framework for the efficient handling of MI BCI protocols", Journées CORTICO, Autrans, France, 2022 (poster presentation)
- D.41. **Corsi, M.-C.**, Chevallier, S., Quentin Barthélemy, Q., Hoxha, I., & Yger, F. "Ensemble learning based on functional connectivity and Riemannian geometry for robust workload estimation", Neuroergonomics conference 2021,

Virtual event, Germany, 2021

- D.42. Gonzalez-Astudillo, J., Ceballos-Dominguez, E.G., Cattai, T., **Corsi, M.-C.**, & De Vico Fallani, F. "Spatial network metrics for characterizing brain-computer interface mental states", NetSci 2021 - International School and Conference on Network Science, Virtual, United States, 2021
- D.43. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Core-periphery markers of longitudinal BCI from multiplex brain networks", Networks2021, virtual event, 2021 (oral presentation)
- D.44. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Functional connectivity predicts MI-based learning", International Conference on Brain-Computer Interface (vBCI), virtual event, 2021 - [Best Oral Presentation Award](#)
- D.45. Gonzalez-Astudillo, J., Cattai, T., **Corsi, M.-C.**, & De Vico Fallani, F. "On the classification of mental states by means of network-based features", NetSci 2020 - International School and Conference on Network Science, Rome / Virtual, Italy, 2020
- D.46. Gonzalez-Astudillo, J., Cattai, T., **Corsi, M.-C.**, & De Vico Fallani, F. "Towards the use of spatial network metrics for characterizing brain mental states", Analysis and Modelling of Spatial Complex Systems, Satellite of the Conference on Complex Systems, 2020 (oral presentation)
- D.47. Chevallier, S., **Corsi, M.-C.**, Yger, F., & Noûs, C, "Extending Riemannian Brain-Computer Interface to Functional Connectivity Estimators", IROS Workshop on Bringing geometric methods to robot learning, optimization and control, Las Vegas, United States, 2020 (oral and poster presentation)
- D.48. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Neurophysiological patterns of a successful BCI learning", Graz BCI Meeting, Graz, Austria, 2019 (oral and poster presentation)
- D.49. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Looking for neurophysiological correlates of BCI learning", Annual Meeting of the Organization for Human Brain Mapping (OHBM), Rome, Italy, 2019 (poster presentation)
- D.50. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Neurophysiological patterns of BCI learning", NeuroFrance, Marseille, France, 2019 (poster presentation)
- D.51. **Corsi, M.-C.**, Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. "Looking for neurophysiological correlates of BCI learning", Journées CORTICO, Lille, France, 2019 (oral presentation)
- D.52. **Corsi, M.-C.**, Chavez, M., Schwartz, D., Hugueville, L., Khambhati, A. N., Bassett, D. S., & De Vico Fallani, F. "M/EEG integration to enhance motor-imagery-based brain-computer interface performances", BIOMAG, Philadelphia, United States, 2018 (poster presentation)
- D.53. Labyt, E., Palacios-Laloy, A., **Corsi, M.-C.**, Fourcalt, W., Bertrand, F., Lenouvel, F., Cauffet, G., Berger, F., Morales, S., & Le Prado, M., "First MEG recordings with an optically pumped 4He magnetometer at ambient temperature", BIOMAG, Philadelphia, United States, 2018 (poster presentation)
- D.54. **Corsi, M.-C.**, Chavez, M., Schwartz, D., Hugueville, L., Khambhati, A. N., Bassett, D. S., & De Vico Fallani, F. "Integrating EEG and MEG information to enhance motor imagery classification in brain-computer interface", Cutting'EEG, Paris, France, 2018 (poster presentation)
- D.55. **Corsi, M.-C.**, Chavez, M., Schwartz, D., Hugueville, L., Khambhati, A. N., Bassett, D. S., & De Vico Fallani, F. "Integrating EEG and MEG information to enhance motor imagery classification in brain-computer interface", BCI Society conference, Asilomar, United States, 2018 (poster presentation)
- D.56. **Corsi, M.-C.**, Chavez, M., Schwartz, D., Hugueville, L., Khambhati, A. N., Bassett, D. S., & De Vico Fallani, F. "Looking for predictors in motor imagery-based BCI", Journées CORTICO, Bordeaux, France, 2017 (poster presentation)
- D.57. **Corsi, M.-C.**, Labyt, E., Fourcalt, W., Gobbo, G., Bertrand, F., Alcouffe, F., Cauffet, G., Le Prado, M., & Morales,

S. "Detecting MCG signals from a phantom with a 4He magnetometer", BIOMAG, Halifax, 2014 (poster presentation during the OPMs workshop and the conference, participation to the best PhD poster contest)

E. Thesis

E.1. **Corsi, M.-C.** Magnétomètres à pompage optique à Hélium 4: développement et preuve de concept en magnéto-cardiographie et en magnétoencéphalographie. Grenoble Alpes (2015) - www.theses.fr/2015GREAT082

F. Patents

F.1. Le Prado, M., Morales, S., **Corsi, M.-C.** & Viana, A., Magnetic shielding. 20160157394, 2015.

F.2. Le Prado, M., Bertrand, F., **Corsi, M.-C.**, Delevoye, E., & Morales, S., Method and device for measuring a magnetic field by synchronised excitations, 20150008916, 2013.

G. Datasets

G.1. **Corsi, M.-C.**, Gitton, C., Gonzalez-Astudillo, J., Kahn, A. E., Hugueville, L., Schwartz, D., George, N., Chavez, M., Dupont, S., Bassett, D. S. & De Vico Fallani, F., Understanding Brain-Computer Interfaces training, Recherche Data Gouv, doi.org/10.57745/RBJRC7

H. Submitted publications

*Co-first author or co-last author; names of collaborators I (co-)supervised are underlined.

H.1. Roca, M., Messuti, G., Klepachevskyi, D., Angiolelli, M., Bonavita, S., Trojsi, F., Demuru, M., Troisi-Lopez, E., Chevallier, S., Yger, F., Saudargiene, A., Sorrentino, P. & **Corsi, M.-C.** (2026). REDDI: A Riemannian Ensemble Learning Framework for Interpretable Differential Diagnosis of Neurodegenerative Diseases. medRxiv - <https://www.medrxiv.org/content/10.64898/2026.04.10.26350617v1>

H.2. Mannino, C., Sorrentino, P., Angiolelli, M., Demuru, M., Trojsi, F., Chavez, M., **Corsi, M.-C.** (2026). Weighted-stochastic Avalanche Transition Matrix (ws-ATM): a tool to investigate brain dynamic and its neuropathological alterations. medRxiv - <https://medrxiv.org/cgi/content/short/2026.01.08.26343631v1>

H.3. Gomel, J., **Corsi, M.-C.**, Dehais, F. (2025). Low-Frequency Textured Gabor Flicker Enhances SSVEP Entrainment and Visual Comfort for BCI Control. biorXiv - www.biorxiv.org/content/10.64898/2025.12.12.693875v1

H.4. **Corsi, M.-C.**, Gitton, C., Gonzalez-Astudillo, J., Chavez, M., Schwartz, D., George, N., Hugueville, L., Kahn, A., Dupont, S., Bassett, D. S., & De Vico Fallani, F. (2025). Understanding Brain-Computer Interfaces training: a longitudinal and multimodal dataset.

H.5. Aristimunha, B., Truong, D., Guetschel, P., Shirazi, S.Y., Guyon, I., Franco, A.R., Milham, M.P., Dotan, A., Makeig, S., Gramfort, A., King, J.R., **Corsi, M.-C.**, Valdés-Sosa, P.A., Majumdar, A., Evans, A., Sejnowski, T.J., Shriki, O., Chevallier, S., Delorme, A. (2025). EEG Foundation Challenge: From Cross-Task to Cross-Subject EEG Decoding. arXiv - <http://arxiv.org/abs/2506.19141>

H.6. Mannino, C., Sorrentino, P., Chavez, M., **Corsi, M.-C.** (2025). Neuronal avalanches as a predictive biomarker of BCI performance: towards a tool to guide tailored training program. bioRxiv - www.biorxiv.org/content/10.1101/2025.05.31.657206v1

- H.7. Debnath, A., Venot, T., Corsi, M.-C.*, & Verma, P.* (2025). Neural mechanisms of training in Brain-Computer Interface: A Biophysical modeling approach. bioRxiv - www.biorxiv.org/content/10.1101/2025.06.21.660834v1
- H.8. Cattai, T., Caporali, C., **Corsi, M.-C.**, Colonnese, S. (2024). Introducing the modularity graph: an application to brain functional networks. arXiv - <http://arxiv.org/abs/2406.15155>