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| CURRICULUM VITAE |  |  |
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|  |  | CANDIDATE: **FRANCESCO EDOARDO VACCARI** |
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| PERSONAL INFORMATIONS |  |  |
| Address |  | Piazza di Porta San Donato 2, 40126 - Bologna, Italy |
| E-mail |  | francesco.vaccari6@unibo.it |
| Nationality |  | Italy |
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| EDUCATION AND TRAINING |  |  |
| Fixed-term researcher Junior |  | **Neural circuits: neurophysiology and neurotechnology of perception, movement and brain-body interactions** |
| 2023 - today |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
|  |  | Project manager: Prof. P. Fattori |
|  |  |  |
| Research Fellow |  | **Computational investigation methods applied to electrophysiological recordings in the posterior parietal and premotor cortex of non-human primates** |
| 2021 - 2023 |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
|  |  | Tutor: Prof. P. Fattori |
|  |  |  |
| Ph.D |  | **Biomedical and Neuromotor Sciences - XXIV° cycle** |
| 2018 - 2021 |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
| Thesis |  | “Complex, but flexible neural encoding of arm movements in the macaque parietal cortex” |
|  |  | Coordinator: Prof. MY Follo – Supervision: Prof. P. Fattori |
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| Master’s degree |  | **Pharmacy** |
| 2012 - 2017 |  | University of Bologna |
|  |  | Final grade: 110/110 cum laude - Date: 11/30/2017 |
| Experimental thesis in Physiology |  | “Absence of mirror neurons in the posterior parietal area V6A of the macaque brain” |
| 2016 - 2017 |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences – University of Bologna |
|  |  |  |
| High school |  | **Scientific High School A. Paradisi – Vignola (MO, Italy)** |
| 2007 - 2012 |  | Final grade: 98/100 |
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| RESEARCH PERIODS / STUDY ABROAD |  |  |
| 7 – 24 June 2022 |  | **Tecnalia Research & Innovation – San Sebastian (Spain)** |
|  |  | Collaboration within the project H2020-EIC-FETPROACT-2019-951910-MAIA Host facility contact person: Dr. Ander Ramos - Murguialday |
|  |  | Activity: comparative study of the neural activity of the motor cortex of non-human primates and human stroke patients during reaching tasks. The results were included in Work Package 4 and presented at the first reviewing meeting of the project. |
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| March – August 2020 |  | **Brain & Cognitive Sciences, Center for Visual Science, Rochester University, NY (USA)** |
|  |  | Collaboration within the H2020 MSCA-RISE PLATYPUS project  Host facility contact person: Prof. Michele Rucci |
|  |  | Activity carried out: study of eye movements in non-human primates. The activities were carried out remotely (Bologna) due to the COVID19 pandemic. |
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| September 2014 – January 2015 |  | **Erasmus+ at Universidad CEU San Pablo – Madrid (Spain)** |
|  |  | Study period. Language of instruction: Spanish and English. |
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| ACQUIRED SKILLS |  |  |
| Use of animals for scientific purposes |  | Animal welfare of non-human primates used in research (principles of the 3Rs, nutrition, spontaneous behavior, intramuscular drug administration).  Primate training through positive reinforcement techniques. |
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| Electrophysiology |  | Intracortical electrophysiological recordings of cortical activity (premotor and motor cortex) using chronic recording systems (UTAH array, 96 channels). |
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| Laboratory |  | Management of electrophysiological data acquisition system.  Management of experimental electro-mechanical system.  Recording of eye movements (Pupil Lab) and electromyographic signals (Biopac).  Implementation of a video recording system with synchronization of multiple cameras (Python).  Software implementation of experimental tasks in virtual reality (Unity, Unity Technologies). |
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| Data analysis |  | Analysis of electrophysiological data through custom scripts (MATLAB).  Spike sorting of action potentials (dedicated Plexon Offline Sorter software ).  Dimensionality reduction methods (Principal Component Analysis, t-SNE, MDS).  Use of machine learning and deep learning algorithms for the decoding of neural activity (clustering algorithms, classifiers and recurrent neural networks).  Video analysis systems (DeepLabCut software package, Mathis et al., 2018 *Nat Neurosci*; anipose).  Analysis of oculomotor and kinematic data.  Storage and sharing of neural data (online repository and standard Hierarchical Format Data). |
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| Other |  | Presentation of results in national and international congresses  Writing of scientific articles  Writing research projects  Co-supervisor of undergraduates  Review activity for scientific journals |
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| CERTIFICATIONS |  |  |
| 12 – 23 April 2021 |  | **“FELASA Laboratory animal course on primates”** |
|  |  | Online – Organized by DPZ, Göttingen (Germany) |
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| RESEARCH TRAINING |  |  |
| Research Fellow |  | **Computational investigation methods applied to electrophysiological recordings in the posterior parietal and premotor cortex of non-human primates** |
| 2021 - 2023 |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
|  |  | Tutor: Prof. P. Fattori |
|  |  |  |
| Ph.D |  | **Biomedical and Neuromotor Sciences - XXIV° cycle** |
| 2018 - 2021 |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
| thesis |  | **“Complex, but flexible neural encoding of arm movements in the macaque parietal cortex”** |
|  |  | Coordinator: Prof. MY Follo – Supervision: Prof. P. Fattori |
|  |  |  |
| Attending graduate |  | **Laboratory of Neurophysiology of Visuo-Motor Systems** |
| 2017-2018 |  | Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
|  |  | Performed activities: electrophysiological recordings from the cortex of primates and data analysis |
|  |  |  |
| Experimental thesis in Physiology |  | **“Absence of mirror neurons in the posterior parietal area V6A of the macaque brain”** |
| 2016-2017 |  | Laboratory of Neurophysiology of Visuo-Motor Systems |
|  |  | Dept. of Biomedical and Neuromotor Sciences – University of Bologna |
|  |  | Supervisor: Prof. P. Fattori – Co-supervisor: Prof. R. Breveglieri |
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| COMPLEMENTARY RESEARCH TRAINING |  |  |
| Course |  | **“Basic elements for the researchers' approach to the use of animals for scientific purposes” 13 ECM** |
| November 2022 |  | Experimental Zooprophylactic Institute of Lombardy and Emilia-Romagna |
|  |  |  |
| Course |  | **“Computational Mathematics”** |
| February – May 2021 |  | Degree in Mathematics, professor V. Simoncini – University of Bologna |
|  |  |  |
| Workshops |  | **“Animal Welfare of non-human primates and other large laboratory animals”** |
| 28-29 September 2020 |  | COST action CA 15131: PrimTrain – Online webinars |
|  |  |  |
| Summer school |  | **“Primate Cognitive Neuroscience”** |
| 28 July – 9 August 2019 |  | G. Stresemann Institut - Bad Bevensen (Germany) |
|  |  |  |
| Course |  | **“Academic English – lv. 2"** |
| March – May 2019 |  | Academic English course for PhD students/doctors in Medicine – course holder: G. Scarpa (University of Bologna) |
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| Course |  | **“Statistical models and applications”** |
| March – May 2019 |  | Master’s degree in Statistical Sciences, course holder prof. G. Galimberti– University of Bologna |
|  |  |  |
| Course |  | **“Use of animals for scientific and educational purposes – level. 1" 46.4 ECM** |
| January – February 2019 |  | Dept. of Veterinary Medical Sciences – University of Bologna + AUSL |
|  |  |  |
| Workshops |  | **“Evidence based training of large laboratory animals”** |
| January 2019 |  | COST action CA 15131: PrimTrain - KU Leuven (Belgium) |
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| PARTICIPATION IN RESEARCH PROJECTS |  |  |
| International proj. |  | **“PLACES”** |
| 2023 - 2027 |  | HORIZON-MSCA-2021-SE-01-101086206 – MSCA Staff Exchanges 2021 – PLACES |
|  |  | Role: co-researcher   Activity: analysis of neurophysiological data related to upper limb movements, eyes and navigation in a virtual environment |
|  |  |  |
| National proj. |  | **“MNESYS: A multiscale integrated approach to the study of the nervous system in health and disease”** |
| 2023 - 2026 |  | PNRR Funds – PE tender – Project PE12 – Code PE000006 |
|  |  | Role: co-researcher   Activity: neurophysiological characterization of the brain circuits underlying sensory-motor functions and decoding of parameters from neural circuits using machine learning techniques |
|  |  |  |
| International proj. |  | **“MAIA: Multifunctional and Adaptive Interactive Artificial intelligence”** |
| 2021 - 2024 |  | H2020-EIC-FETPROACT-2019-951910 - Scientific coordinator: Prof. Patrizia Fattori |
|  |  | Role: co-researcher  Activity:  - Data analysis in collaboration with Tecnalia Reserch & Innovation (Work Package 4, “Real-time testing of neurocomputational models in human and prototype “ )  - Analysis data within Work Package 2 "Adaptable and data efficient real-time decoding of action intention"  - Seminars, project presentation and discussion with partners  - Deliverable writing: already completed D2.1 'Specification of task, recording protocol, data annotation, storage, basic analyses, implant arrays, KPI'; D2.2 in preparation |
|  |  |  |
| International proj. |  | **“PLATYPUS: PLAsticiTY of Perceptual space Under Sensorimotor interactions”** |
| 2017 - 2023 |  | H2020 MSCA-RISE PLATYPUS |
|  |  | Role: co-researcher  Activities: analysis of neurophysiological data related to eye movements and writing of a research project to be conducted in the laboratory of prof. M. Rucci |
|  |  |  |
| National proj. |  | **“ The neurophysiological bases of Biological motion: from laboratory to clinics ”** |
| 2022 - 2025 |  | PRIN 2020-20208RB4N9 - Ministry of University and Research (MIUR, Italy) - Scientific Coordinator: Prof. Patrizia Fattori |
|  |  | Role: co-researcher  Activities: analysis of neurophysiological data, training of non-human primates, management of the electrophysiology laboratory |
|  |  |  |
| National proj. |  | **“PACE: Performing Actions in a Changing Environment”** |
| 2019 - 2022 |  | PRIN2017-2017KZNZLN - Ministry of University and Research (MIUR, Italy) - Scientific Coordinator: Prof. Patrizia Fattori |
|  |  | Role: co-researcher  Activities: analysis of neurophysiological data, training of non-human primates, management of the electrophysiology laboratory |
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| National proj. |  | **“ Development of brain-machine interfaces to improve the living conditions of patients with neurological deficits ”** |
| 2018 - 2019 |  | Call for Research 2018/0373 - Cassa di Risparmio Foundation in Bologna (Italy) |
|  |  | Role: co-researcher  Activity: analysis of neurophysiological data aimed at characterizing the neural activity of the posterior parietal area V6A |
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| REVIEW ACTIVITY |  |  |
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| 2023 |  | **STAR Protocols** |
| 2023, 2022 |  | **Scientific Reports** |
| 2022 |  | **IEEE Transactions on Cognitive and Developmental Systems** |
|  |  |  |
| INVITED SPEAKER AT INTERNATIONAL EVENTS |  |  |
| 2022 |  | **FE Vaccari**  **Work package 4 “Real-time testing of neurocomputational models in human and prototype”** |
|  |  | Presenter for Unibo of WP4 during the first reviewing meeting of the MAIA project (Bologna, Italy) |
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| 2022 |  | **FE Vaccari**  **Comparing monkey and human motor cortices** |
|  |  | Presentation of results during the MAIA project meeting with European partners (San Sebastian, Spain) |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi  **Neural dynamics in parietal areas during arm reaching** |
|  |  | Presentation of results during the kick-off meeting of the MAIA project with the European partners (Bologna, Italy) |
|  |  |  |
| INVITED SPEAKER AT NATIONAL EVENTS |  |  |
| 2022 |  | **FE Vaccari**  **The posterior parietal cortex: a complicated puzzle** |
|  |  | Department Seminar ( Dept. of Biomedical and Neuromotor Sciences - University of Bologna) |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi, M. Filippini, P. Fattori, C. Galletti  **Mixed selectivity in macaque parietal cortex during arm reaching movements** |
|  |  | Annual Meeting of Young Researchers of the Italian Society of Physiology (Bertinoro, Italy) |
|  |  |  |
| PRESENTATION OF POSTERS AT INTERNATIONAL EVENTS |  |  |
| 2023 |  | **FE Vaccari** , S. Diomedi, K. Hadjidimitrakis, M. De Vitis , M. Filippini, P. Fattori  **Neural dynamics of three posterior parietal areas during arm reaching movements evolves in a largely shared neural subspace** |
|  |  | Congress annual of the Neural Control of Movement Society – Victoria (BC), Canada |
|  |  |  |
| 2022 |  | **FE Vaccari,** S. Diomedi, M. Filippini, P. Fattori  **Robust decoding of neural activity from macaque parietal areas during arm reaching** |
|  |  | Society for Neuroscience Annual Meeting– San Diego, US |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi, M. Gamberini, M. Filippini, P. Fattori  **Simultaneous decoding of reaching goals and task phases from medial parietal areas using a Hidden Markov Model** |
|  |  | Society for Neuroscience Annual Meeting - Chicago, US (online) |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi, M. Filippini, P. Fattori, C. Galletti  **Mixed selectivity in macaque medial parietal cortex for gaze and motor parameters** |
|  |  | Vision Sciences Society Annual Meeting (Online) |
|  |  |  |
| 2019 |  | **FE Vaccari,** M. Tabanelli, R. Breveglieri, A. Bosco, M. Gamberini, P. Fattori, C. Galletti  **Neurons modulated by action execution and observation in area V6A of the macaque** |
|  |  | Joint Congress of the Federation of European Physiological Societies of the Italian Society of Physiology (Bologna, Italy) |
|  |  |  |
| 2019 |  | **FE Vaccari,** R. Breveglieri, M. Tabanelli, A. Bosco, M. Gamberini, P. Fattori, C. Galletti  **Neurons modulated by action execution and observation in area V6A of the macacque** |
|  |  | Summer School for Primate Cognitive Neuroscience (Bad Bevensen, Germany) |
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| DISSEMINATION ACTIVITY |  |  |
| 2021 |  | **"Researchers' Night"** |
|  |  | University of Bologna |
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| 2020 |  | **"Researchers' Night"** |
|  |  | University of Bologna |
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| 2019 |  | **"Researchers' Night"** |
|  |  | University of Bologna |
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| 2018 |  | **"Researchers' Night"** |
|  |  | University of Bologna |
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| EDUCATIONAL ACTIVITY |  |  |
| FRONTAL LESSONS |  |  |
| 2023 |  | **“The remembering brain”**  Course in Cognitive Neurophysiology – Master’s degree in Pharmacy (University of Bologna) – course holder: Prof. P. Fattori |
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| 2022 |  | **“Eye movements: a brief introduction”**  Physiology of musculoskeletal system course – Master’s degree in Medicine and surgery (University of Bologna) – course holder: Prof. P. Fattori |
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| 2022 |  | **“Brain Machine Interfaces and their recent advances”**  Neurobiotechnology course – Master's degree in Pharmaceutical Biotechnology (University of Bologna) – course holder: Prof. R. Breveglieri |
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| 2022 |  | **“EMG recording demonstration”**  Physiology of musculoskeletal system course – Master’s degree in Medicine and surgery (University of Bologna) – course holder: Prof. P. Fattori |
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| 2022 |  | **“Computational neuroscience: an example of application in parietal areas”**  Course in Cognitive Neurophysiology – Master’s degree in Pharmacy (University of Bologna) – course holder: Prof. P. Fattori |
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| 2021 |  | **“BMIs: Brain Machine Interfaces. Highlights on a new, fast growing field”**  Neurobiotechnology course – Master's degree in Pharmaceutical Biotechnology (University of Bologna) – course holder: Prof. R. Breveglieri |
|  |  |  |
| 2021 |  | **“Computational neuroscience: new perspectives on old problems”**  Cognitive Neuroscience Course - Master's Degree in Applied Cognitive Psychology (University of Bologna) - course holder: Prof. A. Bosco |
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| 2021 |  | **“Demonstration on EMG / eye movements recordings and body parts tracking”**  Physiology of musculoskeletal system course – Master’s degree in Medicine and surgery (University of Bologna) – course holder: Prof. P. Fattori |
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| 2019 |  | **“Tracking gaze: challenges and opportunities ”**  Physiology of musculoskeletal system course – Master’s degree in Medicine and surgery (University of Bologna) – course holder: Prof. P. Fattori |
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| 2019 |  | **“Optical illusions: Ebbinghaus and Rubber Hand effects”**  Physiology of musculoskeletal system course – Master’s degree in Medicine and surgery (University of Bologna) – course holder: Prof. P. Fattori |
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| ACADEMIC TUTOR |  |  |
| Dec 2022 |  | **Physiology laboratory activities (ECG, Spirometry, Blood Pressure)**  Physiology course laboratory of cardiovascular and respiratory systems – Master’s degree in Medicine and surgery (University of Bologna) – course holder: prof. D. Tupone – 20 hours |
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| Dec 2021 – Jan 2022 |  | **Physiology laboratory activities (ECG, Spirometry, Blood Pressure)**  Physiology course laboratory of cardiovascular and respiratory systems – Master’s degree in Medicine and surgery (University of Bologna) – course holder: prof. D. Tupone – 20 hours |
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| DEGREE THESIS ADVISOR |  |  |
| 2023 |  | **Coding of kinematic parameters during reaching movements in the parietal areas**  Master’s degree in Chemistry and Pharmaceutical Technologies (University of Bologna). Candidate: Giorgia Morrone |
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| 2022 |  | **Functional connectivity between areas of the parietal cortex of non-human primates**  Bachelor's Degree in Biotechnology (University of Bologna) . Candidate: Alberto Angelini |
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| 2022 |  | **Analysis of bioelectrical discharges recorded from macaque motor area neurons during reaching movements**  Master’s degree in Chemistry and Pharmaceutical Technologies (University of Bologna). Candidate: Iris de Menego |
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| 2022 |  | **Neuronal reference systems in macaque area PE during reaching movements**  Master’s degree in Chemistry and Pharmaceutical Technologies (University of Bologna). Candidate: Sergio Mucci |
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| 2021 |  | **Study of the reference systems for reaching movements in the PEc area of the macaque parietal cortex**  Bachelor's Degree in Biological Sciences (University of Bologna) . Candidate: Giovanni Nicoli |
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| 2020 |  | **Better an unsatisfied human or a satisfied pig ? - Critical analysis of neuroimaging studies on the correlation between happiness and intelligence**  Single-cycle master's degree in Pharmacy (University of Bologna) . Candidate: Valentina Delpero |
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| TEACHING TO GRADUATE STUDENTS |  |  |
|  |  | Introduction to MATLAB and Python, basics of functional organization of the motor and parietal cortical areas, application of statistical tests, guidelines on bibliographic research in the scientific field and thesis writing. |
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|  |  | Methods of using software for recording kinematic data (Deeplabcut). Students: Alberto Angelini (degree in Biotechnology, University of Bologna) , Carlotta Barachetti (degree in Chemistry and Pharmaceutical Technologies, University of Bologna) , Alessia Asquini (degree in Chemistry and Pharmaceutical Technologies, University of Bologna) |
| CO-SUPERVISION OF PHD STUDENTS |  |  |
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| 2022 |  | **Training on kinematic data analysis methods**  PhD Course in Biomedical and Neuromotor Sciences (University of Bologna) . Candidate: Caterina Foglino (XXVII cycle) |
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| 2021 |  | **Training on methods of analysis of electrophysiological data and conditioning of non-human primates**  PhD Course in Biomedical and Neuromotor Sciences (University of Bologna) . Candidate: Marta Tabanelli (25th cycle) |
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| PUBLICATIONS |  |  |
| Peer reviewed papers |  | **FE Vaccari,** S. Diomedi, M. Filippini, K. Hadjidimitrakis, P. Fattori  **New insights on single-neuron selectivity in the era of population-level approaches** |
| 2022 |  | DOI: <https://doi.org/10.3389/fnint.2022.929052>  **Frontiers in Integrative Neuroscience** (vol. 16, 1662-5145)  IF: 3.213 (Web of Science, 2021) |
|  |  |  |
| Chapter of a peer reviewed volume |  | S. Diomedi\*, **FE Vaccari\*,** K. Hadjidimitrakis, P. Fattori  **Using HMM to Model Neural Dynamics and Decode Useful Signals for Neuroprosthetic Control** |
| 2022 |  | Chapter 3 (pages 59-79) in **' Hidden Markov Models and Applications' – Publisher: Springer Cham** - DOI: 10.1007/978-3-030-99142-5 |
|  |  |  |
| Peer reviewed papers |  | S. Diomedi\*, **FE Vaccari\*,** C. Galletti, K. Hadjidimitrakis, P. Fattori  **Motor-like neural dynamics in two parietal areas during arm reaching** |
| 2021 |  | DOI: 10.1016/j.pneurobio.2021.102116  **Progress in neurobiology** (205, 102116)  IF: 10,885 (Web of Science, 2021) |
|  |  |  |
| Peer reviewed papers |  | **FE Vaccari\*,** S. Diomedi\*, M. Filippini, C. Galletti, P. Fattori  **A Poisson generalized linear model application to disentangle the effects of various parameters on neurophysiological discharges** |
| 2021 |  | DOI: 10.1016/j.xpro.2021.100413  **STAR Protocols** (2, 2, 100413)  IF: NA (Web of Science, 2021) |
|  |  |  |
| Peer reviewed papers |  | S. Diomedi\*, **FE Vaccari\*,** M. Filippini, P. Fattori, C. Galletti  **Mixed Selectivity in Macaque Medial Parietal Cortex during Eye-Hand Reaching** |
| 2020 |  | DOI: 10.1016/j.isci.2020.101616  **iScience** (23,10,:101616)  IF: 6.107 (Web of Science, 2021) |
|  |  |  |
| Peer reviewed papers |  | R. Breveglieri, **FE Vaccari,** A. Bosco, M. Gamberini, P. Fattori, C. Galletti  **Neurons modulated by action execution and observation in the macaque medial parietal cortex** |
| 2019 |  | DOI: 10.1016/j.cub.2019.02.027  **Current Biology** (29, 1218–1225)  IF: 10,900 (Web of Science, 2021) |
|  |  |  |
| Peer reviewed papers |  | **FE Vaccari\*,** S. Diomedi\*, M. Filippini, P. Fattori  **Neural States in parietal cortex encode rich spatio -temporal information during motor control** |
| Submitted |  | **PLOS Computational Biology** |
|  |  |  |
| Peer reviewed papers |  | S. \_ Diomedi, **FE Vaccari,** M. Gamberini, M. Filippini, K. Hadjidimitrakis, P. Fattori Electrophysiological recordings from three macaque parietal cortex areas during a delayed foveated reaching task. |
| In preparation |  | **Scientific Data** |
|  |  |  |
|  |  | **\*Authors who have contributed equally to the work** |
|  |  |  |
| PhD thesis |  | **FE Vaccari** ; coordinator: MY Follo; supervision: P. Fattori  **Complex, but flexible neural encoding of arm movements in the macaque parietal cortex** |
| 2021 |  | **PhD final thesis in Biomedical and Neuromotor Sciences (XXIV° cycle)** - Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
|  |  |  |
| Experimental Degree Thesis |  | **FE Vaccari** ; speaker: P. Fattori; co-supervisor: R. Breveglieri  **Absence of mirror neurons in the posterior parietal area V6A of the macaque brain** |
| 2017 |  | **Experimental thesis in Physiology** - Master’s degree in Pharmacy - Dept. of Biomedical and Neuromotor Sciences - University of Bologna |
|  |  |  |
| ABSTRACTs |  |  |
| 2023 |  | FE **Vaccari** , S. Diomedi, M. De Vitis , K. Hadjidimitrakis, M. Filippini  **Sensory-motor integration in posterior parietal cortex**  Speech at symposium during the annual congress of the Italian Society of Physiology (Pisa) |
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| 2023 |  | S. Diomedi, **FE Vaccari** , K. Hadjidimitrakis, M. De Vitis , M. Filippini, P. Fattori  **Exploring the relationship between preparation and movement neural subspaces in posterior parietal cortex during reaching movements** |
|  |  | Progress in Motor Control meeting XIV (Rome) |
|  |  |  |
| 2023 |  | **FE Vaccari** , S. Diomedi, K. Hadjidimitrakis, M. De Vitis , M. Filippini, P. Fattori  **Neural dynamics of three posterior parietal areas during arm reaching movements evolves in a largely shared neural subspace** |
|  |  | Annual congress of the Neural Control of Movement Society (Victoria, Canada) |
|  |  |  |
| 2022 |  | **FE Vaccari,** S. Diomedi, M. Filippini, P. Fattori  **Robust decoding of neural activity from macaque parietal areas during arm reaching** |
|  |  | Society for Neuroscience online planner 2022-S-6912-SfN |
|  |  |  |
| 2022 |  | S. Diomedi, **FE Vaccari,** M. Filippini, K. Hadjidimitrakis, P. Fattori  **Exploring Neural States in Parietal Cortex during arm reaching movements with Hidden Markov Models** |
|  |  | Annual congress of the Neural Control of Movement Society ( Dublin , Ireland) |
|  |  |  |
| 2022 |  | P. Fattori, **FE Vaccari,** S. Diomedi, M. De Vitis , M. Filippini  **The posterior parietal area V6A: an attentionally-modulated visuomotor region involved in the control of reach-to-grasp action** |
|  |  | Center for Visual Sciences - University of Rochester (US) |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi, M. Gamberini, M. Filippini, P. Fattori  **Simultaneous decoding of reaching goals and task phases from medial parietal areas using a Hidden Markov Model** |
|  |  | Society for Neuroscience online planner P552.06 |
|  |  |  |
| 2021 |  | S. Diomedi, **FE Vaccari** , C. Galletti, K. Hadjidimitrakis, P. Fattori  **Evidence for motor-related neural states in posterior parietal cortex** |
|  |  | Society for Neuroscience online planner P552.07 |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi, M. Filippini, P. Fattori, C. Galletti  **Mixed selectivity in macaque medial parietal cortex for gaze and motor parameters** |
|  |  | Journal of Vision2021;21(9):2086  IF: 2.004 (Web of Science, 2021) |
|  |  |  |
| 2021 |  | S. Diomedi, **FE Vaccari,** C. Galletti, P. Fattori  **How visual feedback influences neural dynamics in macaque medial posterior parietal cortex** |
|  |  | Journal of Vision2021;21(9):2086  IF: 2.004 (Web of Science, 2021) |
|  |  |  |
| 2021 |  | **FE Vaccari,** S. Diomedi, M. Filippini, P. Fattori, C. Galletti  **Mixed selectivity in macaque parietal cortex during arm reaching movements** |
|  |  | Annual Meeting of Young Researchers of the Italian Society of Physiology (Bertinoro, Italy) |
|  |  |  |
| 2021 |  | S. Diomedi, **FE Vaccari,** K. Hadjidimitrakis, C. Galletti, P. Fattori  **Neural States in posterior parietal cortex during arm control** |
|  |  | Meeting of Young Researchers of the Italian Society of Physiology (Bertinoro, Italy) |
|  |  |  |
| 2019 |  | **FE Vaccari,** M. Tabanelli, R. Breveglieri, A. Bosco, M. Gamberini, P. Fattori, C. Galletti  **Neurons modulated by action execution and observation in area V6A of the macaque** |
|  |  | Acta Physiologica Vol. 227 S718-1748-1708  IF: 7.523 (Web of Science, 2021) |
|  |  |  |
| 2019 |  | **FE Vaccari,** R. Breveglieri, M. Tabanelli, A. Bosco, M. Gamberini, P. Fattori, C. Galletti  **Neurons modulated by action execution and observation in area V6A of the macacque** |
|  |  | Summer School for Primate Cognitive Neuroscience (Bad Bevensen , Germany) |
|  |  |  |
| 2019 |  | P. Fattori, **FE Vaccari,** M. Tabanelli, R. Breveglieri  **Vision for prehension in the medial parietal cortex** |
|  |  | Congress of the Mediterranean Neuroscience Society (Marrakech, Morocco) |
|  |  |  |
| 2019 |  | P. Fattori, R. Breveglieri, **FE Vaccari,** A. Bosco, M. Gamberini, C. Galletti  **Object encoding but not action understanding in the the macaque medial reach-to-grasp network** |
|  |  | Journal of Vision 2019;19(10):112a  IF: 2.004 (Web of Science, 2021) |
|  |  |  |
| 2018 |  | R. Breveglieri, **FE Vaccari,** A. Bosco, M. Gamberini, P. Fattori, C. Galletti  **Does the medial reach-to-grasp network host mirror neurons?** |
|  |  | Society for Neuroscience online planner 587.10/QQ22 |
|  |  |  |
| OTHER |  |  |
| AWARDS AND ACKNOWLEDGMENTS |  |  |
| 2020 |  | **Marco Polo scholarship for research period abroad**  Project: “ Covert shifts of spatial attention in V6A area: a distributed network?” | Duration: 4 months  Location: Laboratory for Neuro-and Psychophysiology, KU Leuven Medical School ( Belgium )  Foreign office supervisor: Prof. Wim Vanduffel – project canceled due to COVID19 |
|  |  |  |
| 2019 |  | **Travel grant**  Summer School “Primate Cognitive Neuroscience” | Duration: 2 weeks  Location: Bad Bevensen (Germany)  Prof. Hansjörg Scherberger (Neurobiology Lab, German Primate Center) |
|  |  |  |
| 2014 |  | **Erasmus+ scholarship for study period abroad**  Location: Universidad CEU San Pablo, Madrid (Spain)  Language of instruction: Spanish and English | Duration: 5 months |
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| REGISTRATION TO SCIENTIFIC SOCIETIES and ENTITIES |  |  |
| 2023 |  | Member of the Neural Control of Movement Society |
| 2021 - 2022 |  | Member of the Society for Neuroscience |
| 2023 |  | Member of the Italian Society of Physiology |
| 2018 - 2023 |  | Pharmacist enrolled in the Register of Pharmacists of Modena |
|  |  |  |
| LANGUAGES |  |  |
| Italian |  | Native language |
| English |  | Level B2 – Certification: First Certificate, Cambridge Institute, 2011 |
| Spanish |  | Level C1 – Certification: CLA certificate – University of Bologna, 2015 |
| French |  | Bases |
|  |  |  |
| COMPUTER KNOWLEDGES |  |  |
| Programming |  | Matlab, Python, C#, Arduino |
| Softwares |  | Plexon Offline Sorter, Adobe Illustrator, basics of Adobe Photoshop and Pinnacle Studio, Office package, Unity graphics engine |
| OS |  | Windows, Ubuntu 20.04 |
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| I hereby authorize the use of my personal data in accordance to the GDPR 679/16 and Italian Legislative Decree no. 196/2003 | | |