

Date of birth
31-08-1996

Nationality
Italian

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OSCR
<https://www.openscience-rotterdam.com/2020/10/30/defina/>

Address
Rotterdam,
The Netherlands

Serena Defina

Scientific researcher / Data Scientist

Education

2020 - 2022 : MSc in Health Sciences, Epidemiology: 9/10 (Cum Laude)
Erasmus University Rotterdam (The Netherlands)

2018 - 2020 : MSc-Res in Cognitive Neuropsychology: 9.2/10 (Cum Laude)
Vrije Universiteit Amsterdam (The Netherlands)

2015 - 2018 : BSc in Psychology: 110/110 (Summa cum Laude)
University of Bologna (Italy)

2010 - 2015 : High School Diploma: 100/100 (Summa cum Laude)
Liceo Classico Statale Michele Morelli (Italy)

Research Experience

July 2020 - present : PhD Candidate, Dept. of Child and Adolescent Psychiatry
Erasmus Medical Center, Rotterdam (The Netherlands)

Applying advanced prediction and causal inference methods to investigate the role of early-life stress in the development of depressive and cardio-metabolic multi-morbidity. Supervision: Prof. Dr. Henning Tiemeier [tiemeier@hsph.harvard.edu]; Dr. Charlotte Cecil [c.cecil@erasmusmc.nl]; Dr. Janine Felix [j.felix@erasmusmc.nl].

Jan - Jul 2020 : Visiting Researcher, Cambridge Consciousness and Cognition Lab
University of Cambridge (United Kingdom)

Used computational modelling and multivariate analysis of EEG data to identify biomarkers of altered sensory processing in chronic pain conditions. Supervision: Dr. Tristan Bekinschtein [tb419@cam.ac.uk]

Feb - Jul 2019 : Internship, Spinoza Centre for Neuroimaging
Royal Dutch Academy of Sciences, Amsterdam (The Netherlands)

Collected and analysed fMRI data for: 1) Optimizing whole-brain sequences at (7 Tesla) Ultra-High Field; 2) Decoding behavioural decisions in a Probabilistic Reversal Learning task. Supervision: Dr. Tomas Knapen [t.h.j.knapen@vu.nl]

Feb - Apr 2018 : Internship, Cognitive and Affective Neuroscience Lab
Neurology Department, Universitätsklinikum Schleswig-Holstein, Lübeck (Germany)

Helped planning and conducting EEG studies on the influence of anger and aggression on mu suppression rhythm as a proxy of “mirror-system” activity. Supervision: Dr. Ulrike Krämer [ulrike.kraemer@neuro.uni-luebeck.de]

Mar - Jun 2017 : Internship, Service for Cognitive Enhancement during Development
Cesena (Italy)

Administered psychometric tests (e.g., Raven’s Progressive Matrices, WISC-IV) to children from 7 up to 17 years old. Supervision: Dr. Mariagrazia Benassi [mariagrazia.benassi@unibo.it]

Awards

2023 : eScience fellowship for research software engineering
Netherlands eScience Center

2020 : Best Master Thesis
Faculty of Behavioural and Movement Sciences, Vrije Universiteit Amsterdam

2018, 2020 : Erasmus+ for traineeship
European Union, Erasmus Programme

2015 : Excellence prize "100 e lode"
Italian Ministry of Education

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Software Development Skills

Programming

- **Python** (data handling and visualization, neuroimaging and timeseries analysis, machine learning, application development)
- **R** (data handling, statistical analyses, Shiny application development)
- **Matlab** (advanced EEG analysis, data visualization)
- **Bash, MySQL, LaTeX** (basic scripting / functionality)

Publications

Differential effects of prenatal and postnatal early-life stress on internalizing symptoms, adiposity and their comorbidity in adolescence

Defina et al. (in press). JAACAP

Depression, cardiometabolic disease, and their co-occurrence after childhood maltreatment: an individual participant data meta-analysis including over 200,000 participants

Souama et al. (2023). BMC Medicine, 21(93). <https://doi.org/10.1186/s12916-023-02769-y>

Mapping gene by early life stress interactions on child subcortical brain structures: A genome-wide prospective study

Bolhuis et al. (2022). JCPP Advances, 2(4), e12113. <https://doi.org/10.1002/jcv2.12113>

Attentional modulation of neural dynamics in tactile perception of complex regional pain syndrome patients

Defina et al. (2021). European Journal of Neuroscience, 54(4), 5601– 5619. <https://doi.org/10.1111/ejn.15387>

Communication Skills

2023 : Invited Poster, OHBM, Montreal

Associations of arterial thickness, stiffness and blood pressure with brain morphology in adolescence

2023 : Oral Presentation, ESCAP, Copenhagen

Disentangling temporal windows of exposure for disease comorbidity prediction

2022 : Oral Presentation, Open Science Community Rotterdam

Amazing data vsualization in Python (matplotlib and seaborn tutorial)

2021, 2022 : Oral Presentations, EarlyCause consortium meeting

Topics: Early-life stress cumulative score construction and multi-cohort harmonization; Differential effects of prenatal and postnatal early-life stress on internalizing symptoms, adiposity and their comorbidity in adolescence.

2021, 2022 : Oral Presentations, Generation R group

Topics: How GitHub saved my life - introductory tutorial; Rebutting existing misconceptions about multiple imputation as a method for handling missing data.

2022 : Poster, EarlyCause consortium meeting

Research project: "Arterial health and brain morphology".