PHD POSITION IN DEVELOPMENTAL COGNITIVE NEUROSCIENCE & DATA SCIENCE

Applications are invited for a 3-year PhD position starting October 1st, 2025, to study preterm-born children's developmental trajectories. The project will adopt an interdisciplinary approach combining neuroscience, developmental psychology, and data science. The PhD candidate will be funded by the CNRS through the MITI (*Mission pour les Initiatives Transverses et Interdisciplinaires*) for 3 years to complete the project. The candidate will be based at the LaPsyDÉ Lab (https://www.lapsyde.com/, CNRS UMR 8240, Université Paris Cité) at La Sorbonne in Paris, France and will collaborate with Edouard Duchesnay, GAIA Brain Imaging and Data Science Lab (https://gaia.neurospin.fr/, CNRS UMR 9027, CEA) at Neurospin center in Saclay.

Qualifications:

- Candidates must have a Master degree in Psychology, Neuroscience, Computer Science, or related field
- Good written and spoken English skills
- Strong programming skills (Python or R)
- Ability to work independently and good organizational skills

Applications consisting of a CV (max. 2 pages) and contact information of 2 professional references should be sent to Dr Iris Menu (iris.menu@u-paris.fr / https://sites.google.com/view/irismenu/)

Application deadline: May 31, 2025

Short description of the project:

Preterm birth affects approximately one in ten children globally and presents significant developmental risks. This PhD project proposes an interdisciplinary approach, combining neuroscience, developmental psychology, and advanced data science methods, to study premature children's developmental trajectories. The project has three main objectives: (1) identify distinct multilevel profiles in premature children aged 9–10 using genetic, brain, cognitive, and behavioral data through sophisticated machine learning techniques (including recurrent neural networks and temporal convolutional networks); (2) analyze their developmental trajectories to age 15 using latent class mixed models (LCMM); and (3) determine predictive factors through multivariate statistical analysis. Drawing on the ABCD® study cohort of over 10,000 children (including 2,000 premature), this research will leverage state-of-the-art statistical methods and machine learning models to deepen our understanding of preterm-born children's development. Clinically, identifying risk and protective factors through these advanced analytical approaches will guide the development of personalized early interventions. The innovative data science methodology developed during this PhD could also be adapted to various clinical applications.