Postdoctoral Researcher in Computational Neuroimaging (Psychosis & Lifespan Normative Modelling)

Employer: Department of Psychiatry, Jena University Hospital
Contract: 2 years initially; renewable for up to 3 additional years subject to performance
Project: "*The glue that holds the pieces together": Unlocking Cognitive Health in Psychotic Disorders* (Wellcome Trust)
Application deadline: 30 September 2025
Preferred start: from November 2025

Short description

This project will (i) quantify global and regional deviations from typical ageing using brain-age models, (ii) disentangle prenatal vs. postnatal structural deviations by leveraging lifespan normative models for cortical gyrification and grey-matter volume, and (iii) characterise and predict longitudinal brain change in psychosis by estimating individual rates of ageing.

Role

You will extend BrainAGE from global estimates to **regional normative models** using Bayesian regression and **GAMLSS** to derive age- and region-specific reference distributions (centiles) and individual deviation scores. The work spans **multi-site morphometry**, **scanner harmonisation**, model comparison, and **external validation**.

You will work **closely with the project lead at the University of Bath** and collaborate with partners in **Cambridge, Oxford, London, and Cardiff** on all aims, including joint analyses and dissemination.

What we offer

- Join the small, highly engaged team **behind the CAT12 toolbox and BrainAGE**.
- A collaborative, supportive atmosphere with genuine day-to-day interaction and room to do your best work.
- Close collaboration with the **Bath lead** and active links to **Cambridge, Oxford, London, and Cardiff** (regular cross-site meetings and joint outputs).

Requirements

- PhD in Psychology, Mathematics, Computer Science, Neuroscience, Physics, or a related field.
- Strong skills in **machine learning and statistics**; experience with **Gaussian process regression** and/or **probabilistic regression**.
- Experience with **normative modelling** is an advantage.
- Proficiency in **Python** (and ideally **C/C++**); experience with **MRI morphometry**.
- Ability to work independently and as part of a team; excellent written and spoken **English**.

Application

Please send **one PDF** containing: motivation letter; CV (including publications); degree certificates with grades; list of relevant courses; and the names and email addresses of **two referees** to **Christian.Gaser@uni-jena.de** till **30 September 2025**.

Contact

For further information about the project, contact:
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