Freie Universität Berlin - Fachbereich Biologie, Chemie, Pharmazie - Institut für Biologie AG Hiesinger

The Hiesinger lab is a basic research neurobiology lab at the Free University in Berlin Germany. The main focus of the lab is the study of how genomic information 'unfolds' to develop neural networks with remarkable information content: flies, which we use as a model, have brains that compute flying in 3D, navigation, metabolism and advanced learning and memory capabilities - all prior to any training. Our team includes neuroscientists, advanced laser microscopists (to live observe brain wiring), bioinformaticians and closely collaborating mathematicians. Starting in 2026 we are conducting a dedicated study entitled 'The Information content of brain wiring', funded by the Volkswagen Foundation Pioneering Research Program 'the unknown unknown.' The basic premise is simple: The information content of artificial neuronal networks can be saved in precise bits, yet no such number has ever made sense for biological neuronal networks. Not only the number, even what parameters should be quantified remains unclear – a true unknown unknown to be tackled experimentally within an information theoretical framework. The laboratory is part of a larger university community and an interdisciplinary research consortium to study brain wiring that includes.

Research assistant (postdoc) (m/f/d)

full-time job limited to 29.02.2028 (end of project)

City: Berlin; Starting date (earliest): At the earliest possible; Remuneration: Entgeltgruppe 13 TV-L FU; Reference number: Information Theorist (m/w/d); Closing date: 17/11/25

Working field

We are seeking an information theorist with an academic background in mathematics or bioinformatics and a specialization in information theory (Shannon entropy, compressibility, effective complexity and logical depth). The data basis for the analyses are two-fold: first, recent connectome data, i. e. large datasets of all synaptic connections in the fly brain based on electron-microscopic reconstruction; second, high-resolution live imaging data of the developmental transformations that encode information in biological neural networks. The information theorist will be embedded with experimental scientists and other mathematicians to develop the tools to analyse this data and come up with measure of both information capacity and information content of brain wiring.

Requirements

Requirements:
PhD in mathematics or a related field.

(Professional) Experience:
Previous academic experience with information theory in basic or applied research. We are not looking for a data analyst of 'omics' data, but a theorist with the expertise to develop new ideas and models.

Application

Applications should be sent by e-mail, together with significant documents, indicating the reference code, no later than November 17th , 2025 in PDF format (preferably as one document) to Prof. Dr. Peter Robin Hiesinger: prh@zedat.fu-berlin.de or postal to

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With an electronic application, you acknowledge that FU Berlin saves and processes your data. FU Berlin cannot guarantee the security of your personal data if you send your application over an unencrypted connection.

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More information at https://stellenticket.de/199046/TUB/
Offer visible until 17/11/25