Bayesian Statistics and Bayesian Cognitive Modeling

Target group: Non-medical PhD students

Prerequisite: basic knowledge of statistics, basic knowledge of R

Credit Points: 2

Objectives:

Computational modeling and mathematical modeling provide an insightful quantitative framework that allows researchers to inspect internal cognitive variables and to understand hidden mechanisms. Hence, cognitive modeling has gained increasing attention in many areas of cognitive science and neuroscience. One illustration of this trend is the growing popularity of Bayesian approaches to cognitive modeling.

However, many researchers, especially early stage researchers, often find this approach too technical and have difficulties adopting it for their own purpose. Thus, there remains a critical need to provide a comprehensive introduction with hands-on demonstrations for the wide dissemination of computational modeling methods.

This workshop school is dedicated to introducing PhD students to the basic knowledge of Bayesian statistics as well as basic techniques of Bayesian cognitive modeling with a newly developed probabilistic programming language Stan (mc-stan.org), along with its R platform RStan, in a hands-on manner. A brief introduction to R is also provided at the beginning of the workshop. Students are expected to have a deeper understanding of Bayesian statistics and are expected to be able to build simple hierarchical Bayesian models after this workshop.

Date:

08.10.2018, 09:00 – 17:00

09.10.2018, 09:00 – 17:00

10.10.2018, 09:00 – 13:00

Instructor: Lei Zhang (Institute for Systems Neuroscience)