Instructions final assignment

The final assignment will make up 50% of the final grade. You can choose between a computational or a conceptual version of the final assignment. Both are aimed at applying the knowledge learned during the lectures of the course. To ensure the quality of the assignments you have to hand in a 1-page proposal describing your idea before November 21th 2016. The final assignments have to be handed in before **January 10th 2016 12.00 AM**.

Computational

If you choose the computational final assignment, you are asked to implement a computational model yourself in Python. The aim of the model is that it can contribute to our understanding of how the brain might tackle a certain computational problem. To test and validate your model you can either use freely available neuroimaging data (there are some sources, but beware that the chance is small that you find exactly the data you need), or run you model on simulated data.
Your assignment will be judged mainly by the following points:

- A clean and correctly working implementation in Python.
- It's usability for explaining brain function.
- Your elaboration of the background of the problem you try to study and how your model can contribute.

Conceptual

The conceptual final assignment consists of writing a grant proposal for a 4-year PhD research project. This research project should combine computational modelling with neuroscience. A clear research question has to be formulated and coupled to computational modelling. This could mean proposing experiments to test an already existing computational model of a cognitive process or proposing new computational models to explain cognitive processes. The research covered during the guest lectures can be seen as example.

<u>1-page proposal (deadline November 21th)</u>

In the one page intermediate proposal the general question that will be addressed in the grant proposal has to be specified and motivated. More specifically, briefly explain the theoretical motivation of the question and a broad outline how this can be answered with computational neuroscience.

<u>Final assignment (deadline January 10th)</u>

The grant proposal should describe 4 years worth of research to investigate the overarching question. The proposal should be approximately 4-5 pages with a maximum of 2000 words (excluding figures and references). The format of the research proposal can be found

on Blackboard. The research question(s) have to be motivated with background literature. It should be made clear that the proposed research will lead to new insights. There should be a clear connection to the methods and techniques discussed during the course.

Evaluation criteria

The grant proposal will be evaluated on the basis of the following criteria:

- Originality and novelty of research idea
- Theoretical motivation
- Suitability of the proposed methods to answer the question(s)
- Connection to learned computational methods/techniques

Examples

Presentation

After handing in the assignment you have to present your work to your fellow students in a 3-minute pitch using **1 slide**. You have to hand in your slide one day before your presentation (January 9th or January 16th). Doing the pitch is a prerequisite for taking part in the exam.

In the pitch you should mention the following:

- **The problem** your assignment was aimed at
- **How** you have/proposed to solved it
- The scientific/societal **relevance** of your project

Please realize that 3 minutes is very short, so try to be to the point and make it understandable for everybody.