



CS-E577005 : Computational Theories of the Brain

Prof. Stéphane Deny

Department of Neuroscience and Biomedical Engineering

Department of Computer Science

Aalto University

Lecture 2: How to work on your presentations?

Groups and Topics

- ▼ T1_PSYCHOPHYSICS
 - ▶ ADDITIONAL_MATERIAL
 - ▶ ST1_JIM_BINDING_MODEL
 - ▶ ST2_FIT_FEATURE_INTEGRATION_THEORY
 - ▶ ST3_ART_ADAPTIVE_RESONANCE_THEORY
- ▼ T2_EFFICIENT_CODING
 - ▶ ST1_RETINAL_CELL_MODEL
 - ▶ ST2_VISUAL_CORTEX_MODEL
- ▼ T3_DEEP_LEARNING_MODELS
 - ▶ ST1_VISUAL_SYSTEM
 - ▶ ST2_MOTOR_AND_NAVIGATION
- ▶ T4_MEMORY_HOPFIELD
- ▶ T5_ATTRACTOR_NETWORKS
- ▶ T6_CONTROL_THEORY
- ▶ T7_CHAOS

	0	1	2
T1_ST1	egor.eremin@aalto.fi	duy.vu@aalto.fi	
T1_ST3	verna.heikkinen@aalto.fi	boshuai.ye@aalto.fi	
T2_ST2	aleksanteri.sladek@aalto.fi	anlin.1.sun@aalto.fi	
T3_ST2	hoanh.le@aalto.fi	anton.vavilov@aalto.fi	
T4	adrian.muller@aalto.fi	shohreh.askari@aalto.fi	
T5	eliecer.diazdiaz@aalto.fi	sebastian.hannula@aalto.fi	
T6	shibei.zhu@aalto.fi	janne.lehtimaki@aalto.fi	luna.ansari@aalto.fi
T7	kai.hippi@aalto.fi	sonika.baniya@aalto.fi	

Timeline of the course

02.05.2024 (today): start reading the material during the class

Homework: continue reading the material and prepare your presentations

(9.5. Ascension Day - no teaching)

16.05.2024: 2 groups present their topic (Topics T1)

23.05.2024: 2 groups present their topic (Topics T2 – T3)

30.05.2024: 2 groups present their topic (Topics T4 – T5)

06.06.2024: 2 groups present their topic (Topics T6 – T7)

Mark the date!

Instructions for the presentation

- You will have 30-40 minutes to present (not extremely precise). Then there will be time for questions and feedback.
- You will be able to use slides and/or the whiteboard. Whiteboard is recommended for technical explanations. Practice on a whiteboard before your presentation.
- You may get questions during your presentation.

Recommendations for the presentation

- Present the facts about the brain that the theory explains
- Present the theory. Extract the essential technical parts of the theory and explain those as clearly and simply as possible. Use the whiteboard for maths.
- Present the results of the theory: which facts does it explain well? Which facts remain unaccounted for by the theory?

Tip 1: You may ignore some of the content present in the reading material.

Tip 2: Dive deep into the maths. And then come back to the surface (remember your early confusions).

Tip 3: The magician hat.



How to work together - recommendations

- Each student reads all the reading material.
- Meet once or more to help each other understand the difficult parts.
- Split the presentation in parts, each student responsible for their part.
- Meet a couple of times to put the presentation together such that it is coherent and rehearsed.

Building lecture notes

- Some of you take excellent notes. They could serve as lecture notes for next year. So if you are happy with your notes, please send them to us at the end of the class!
- The lecture notes need to be formatted in LaTeX
- The mathematical derivations seen in class should ideally appear in the lecture notes.

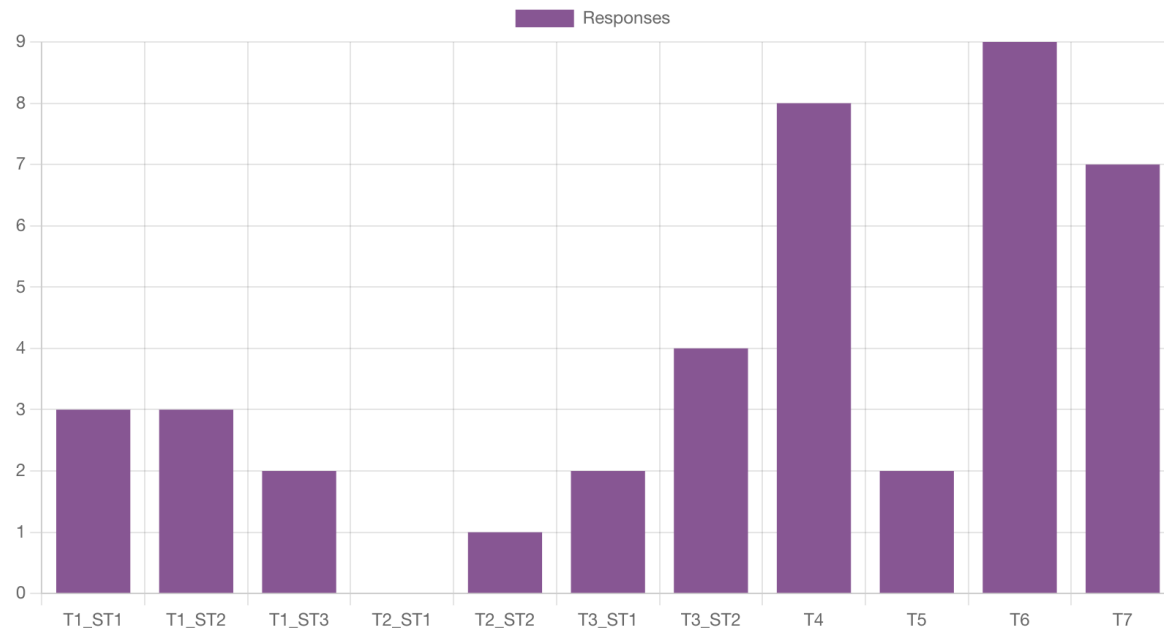
Program: Session 2 (May 2)

- gather with your group and identify your referent TA
 - T1-T3: Ray
 - T4-T7: Andrea
- book two meeting dates with your referent TA
 - Meeting 1: Early. **Ask >5 questions (written in advance)** about the reading material.
 - Meeting 2: Approx one week before your presentation date. Give a rehearsal presentation and get feedback (either Shamsi or me or both will try to also attend that one).
- Start reading the material in class today. Ask your questions to us as they arise.

Program: Sessions 3-4-5-6 (May 16 to June 6)

- 2 groups presents: 30-40 minutes for each presentation
- 8 minutes for questions
- 8 minutes for feedback
- 10 minutes break
- The second presentation should start no later than 15h07.

Groups and Topics



Grading – Pass or Fail

Requirements for passing the class:

1. Attend most lectures (will not be checked) – There is no online option.
2. Present your topic to the class
 - The jury will give detailed feedback on your presentation
3. Organize **two** meetings with your referrent TA ahead of your presentation:
 - Meeting 1: Ask any question you have about the reading material
 - Meeting 2: Give a rehearsal presentation and get feedback (either Shamsi or me will try to also attend that one)

Dates and rooms

Thu 25.04.2024 14:15 - 16:00, R001/M205

Thu 02.05.2024 14:15 - 16:00, R001/M240

(9.5. Ascension Day - no teaching)

Thu 16.05.2024 14:15 - 16:00, R001/M240

Thu 23.05.2024 14:15 - 16:00, R001/M240

Thu 30.05.2024 14:15 - 16:00, R001/M240

Thu 06.06.2024 14:15 - 16:00, R001/M240 (on exam week)