Visual Object Recognition
Computational Models and Neurophysiological Mechanisms
Neurobiology 130/230. Harvard College/GSAS 78454
Please fill in this poll to get to know more about you:

https://forms.gle/GfJHKhFATxC5rYPU9
Visual Object Recognition
Computational Models and Neurophysiological Mechanisms
Neurobiology 130/230. Harvard College/GSAS 78454

Web site:  http://tinyurl.com/visionclass
→ Class notes, Class slides, Readings Assignments

Location:  Northwest B108

Time:  Mondays 03:00 – 05:00

Lectures:
Faculty:  Gabriel Kreiman (and invited guests)

Contact information:
Gabriel Kreiman  Dianna Hidalgo
gabriel.kreiman@tch.harvard.edu diannahidalgo@g.harvard.edu
Office Hours: Before class (Mondays 2pm), after class (Mondays 5pm). By appointment
# Visual Object Recognition
Computational Models and Neurophysiological Mechanisms

**Neurobiology 130/230. Harvard College/GSAS 78454**

## GRADING

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Class participation</td>
<td>15%</td>
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<tr>
<td>Comments on lecture notes</td>
<td>15%</td>
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<tr>
<td>Homework</td>
<td>50%</td>
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<tr>
<td>Final paper</td>
<td>20%</td>
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GRADING. Comments on lecture notes* 15%

Lecture notes available at:

Maximum grade per week = 10 points.

- Spelling/grammar/wrong citation/wrong figure reference/etc: 1 point
- Undefined word in text, undefined variable in equation: 2 points
- Error in equation: 10 points
- Erroneous statement: 5 points
- Suggestion for figure improvement: 4 points
- Specific clarification question: 3 points
- Relevant work missing in notes: 3 points

Filename: <YOURNAME>_LECTURE<LECTURENUMBER>_COMMENTS

Format: PDF, Word, Text, Latex
Lecture number, line number, your comments/edits
Due date: Monday, day of the lecture at midnight.
Upload to Canvas
GRADING. Homework* 50%

One reading assignment per class.
Original scientific literature
Total of 11 reading assignments
Write two paragraphs about the paper:

Paragraph 1: Discuss one missing control or one problem with the interpretation.

Paragraph 2: Discuss a logical follow-up question.

Note: Do NOT copy and paste the paper. We have already read it.

Filename: <YOURNAME>_Assignment<AssignmentNumber>
Format: PDF, Word, Text, Latex
Due date: One week after assignment discussion in class. Monday, midnight. See specific dates on website.
Upload to Canvas
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Note: no class on 09/04/2023 (Labor Day)

Class 1 [09/11/2023]. Introduction to Vision
Class 2 [09/18/2023]. The Phenomenology of Vision
Class 3 [09/25/2023]. Natural image statistics and the retina
Class 4 [10/02/2023]. Learning from Lesions

Note: no class on 10/09/2023 (Indigenous Day)

Class 5 [10/16/2023]. Primary Visual Cortex
Class 6 [10/23/2023]. Adventures into terra incognita
Class 7 [10/30/2023]. From the Highest Echelons of Visual Processing to Cognition
Class 8 [11/06/2023]. First Steps into in silico vision
Class 9 [11/13/2023]. Teaching Computers how to see
Class 10 [11/20/2023]. Computer Vision
Class 11 [11/27/2023]. Connecting Vision to the rest of Cognition [Dr. Will Xiao]
Class 12 [12/06/2023]. Visual Consciousness

Recommended books


Other good books

Academic Integrity Policy

All reading assignments will be discussed in class. During class, collaboration and discussion is not only permitted but actually encouraged.

After class, each student must prepare the homework on his/her own. Students should be aware that in this course collaboration of any sort on any work submitted for formal evaluation is not permitted. This means that you may not discuss your problem sets, paper assignments, exams, or any other assignments with other students. All work should be entirely your own.

The use of textbooks, books and articles is encouraged. Students must use appropriate citation practices to acknowledge the use of books, articles, websites or lectures, that were consulted to complete your assignments.

You are welcome to use Large Language Models (like chatGPT) for the class. You must indicate how you used it (specific LLM, prompt used, etc). Also, you are responsible for the answers that you provide (e.g., if the answer is wrong, you cannot blame the Large Language Model).

Discussion: Monday 09/18/2023

Reading assignment paper due: Monday 09/25/2023

Reading available at:
http://klab.tch.harvard.edu/academia/classes/Neuro230/2023/Neuro_130_230_Reading_Assignments_2023.html