CS5340:
Quiz #1

Asst. Prof. Harold Soh

TAs: Eugene Lim

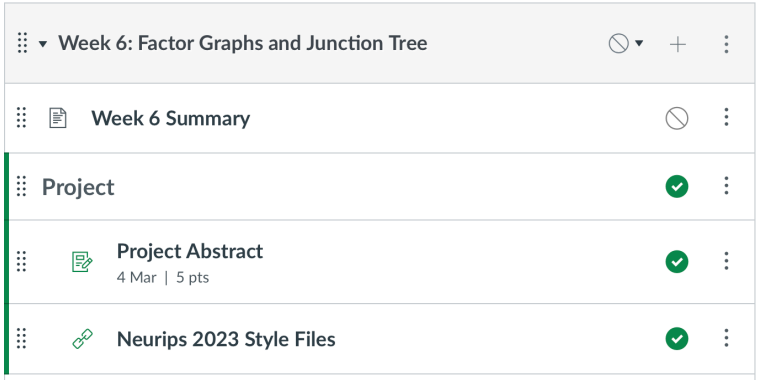
Time Remaining

0

Take a 10 minute break…

Administrative Issues

- **Project Groups:**
  - **Abstracts due:** 4 March 2024
  - Due on Canvas.
    - NeurIPS LaTeX Template: https://neurips.cc/Conferences/2023/PaperInformation/StyleFiles
    - Up to 4 pages excl. references



Project Abstract (5%)

- **Introduction**
  - What is the problem you want to solve?
  - Why do you want to solve it?
  - Why is it important/interesting?
- **Related Work**
  - What other work has been done in this area?
- **Approach/Methodology**
  - How do you propose to solve it?
  - Why do you want to solve it this way?
- **Preliminary Results** (if any)
  - What have you done so far?
- **Ethical/Social Impact Statement**
  - What ethical/social impact would this project have (if any)?
- **AI Tool Use**
  - If you used AI Tools (e.g., LLMs), discuss how they were used.

- **Note:** Support your statements with evidence (references and/or results)

Final Project Report Evaluation Criteria

- **Relevance** (20%)
  - Does it involve Uncertainty Modeling?
  - Does it apply/use the ideas/concepts in CS5340 (or beyond)?
- **Thoroughness** (40%)
  - Are the stated goals *clearly defined*?
  - Is there evidence of a solid effort to accomplish the stated goals?
  - Is the problem well-formulated? Is the proposed method well-justified? Were the experiments well-designed and well-executed?
- **Creativity** (10%)
  - Is there novelty in the work? Is there a creative solution or experimental method?
- **Communication** (20%)
  - Is the report well-written? Is the presentation clear?
  - Does it clearly communicate the key ideas?
- **Peer Review** (10%)
  - What did your team-mates think about your work?

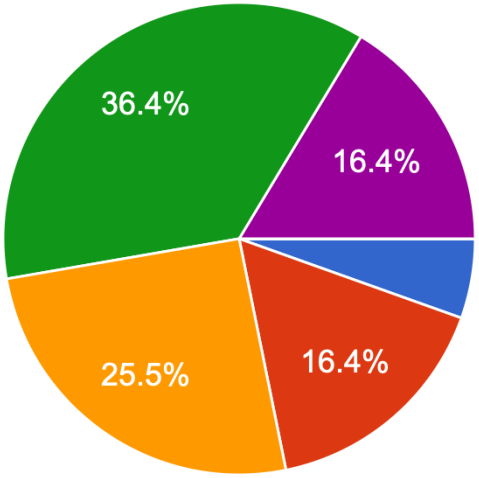
Course Schedule (Tentative)

Week	Date	Lecture Topic	Tutorial
1	16 Jan	Introduction to Uncertainty Modeling + Probability Basics	~~Introduction~~
2	23 Jan	Simple Probabilistic Models	Introduction and Probability Basics
3	30 Jan	Bayesian networks (Directed graphical models)	More Basic Probability
4	6 Feb	Markov random Fields (Undirected graphical models)	DGM modelling and d-separation
5	13 Feb	Variable elimination and belief propagation	MRF ~~+ Sum/Max Product~~
6	20 Feb	Factor graphs	**Quiz 1**
-	-	**RECESS WEEK**	
7	5 Mar	Mixture Models and Expectation Maximization (EM)	Linear Gaussian Models
8	12 Mar	Hidden Markov Models (HMM)	Probabilistic PCA
9	19 Mar	Monte-Carlo Inference (Sampling)	Linear Gaussian Dynamical Systems
10	26 Mar	Variational Inference	MCMC + Langevin Dynamics
11	2 Apr	Inference and Decision-Making	Diffusion Models + Sequential VAEs
12	9 Apr	Gaussian Processes (optional)	**Quiz 2**
13	16 Apr	Project Presentations	Closing Lecture

Course Feedback (N=55)

How do you find the lectures?

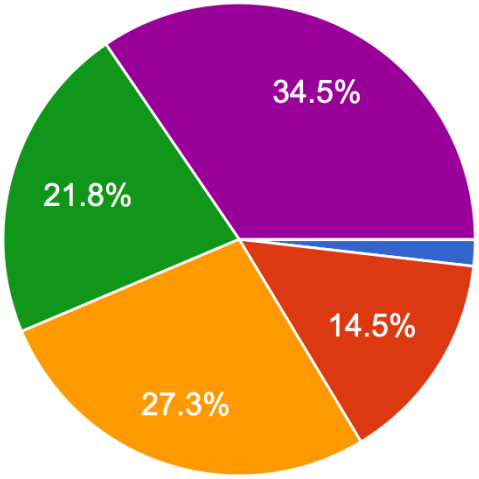
55 responses



- I have no clue what the lecturer is taking about most of the time
- I'm confused half the time.
- The lectures are ok. Not the worst, not the best.
- Lectures are clear and I understand the material quite well.
- Lectures are great! Understandable and interesting!
- No comment. I don't attend lectures.

We are doing blended learning with video lectures and in-class tutorials. Do you like this style or prefer just regular live lectures?

55 responses

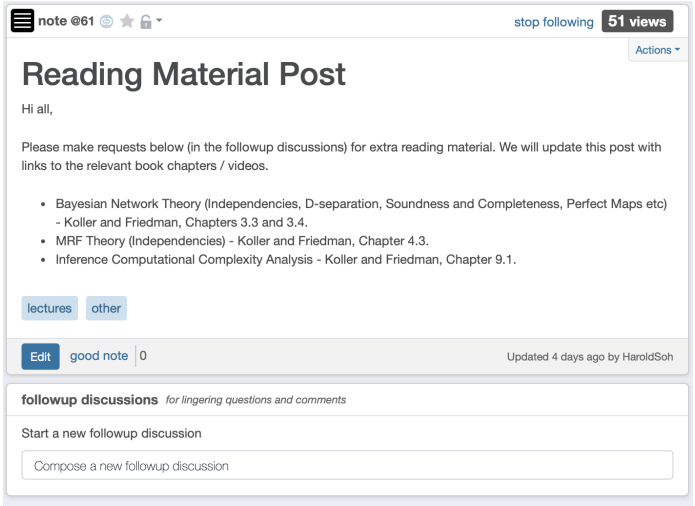


- I really hate this approach. Please go back to a regular lecture.
- I don't like the problem solving questions and prefer a regular lecture.
- Both are ok for me.
- I prefer this lecture style a little more than regular lectures.
- I much prefer this style of lectures!
- No comment. I don't attend lectures.

Lecture: Comments/Suggestions

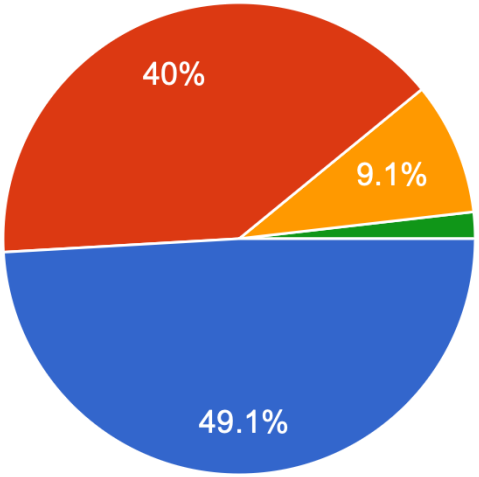
- Material Difficulty:
  - “Quite abstract”
  - “Material is very difficult”
- Material Amount:
  - “Study plan is intensive”
  - “Lecture videos too long”
- More materials:
  - “More annotations and reference to textbook materials”
  - “Provide more materials for the fundamental. I do not have any background in math and stats.”

Lecture	Duration
L1	1.18 hours
L2	2.03 hours
L3	2.98 hours
L4	2.18 hours
L5	2.70 hours



Do you think the tutorials are a useful learning experience?

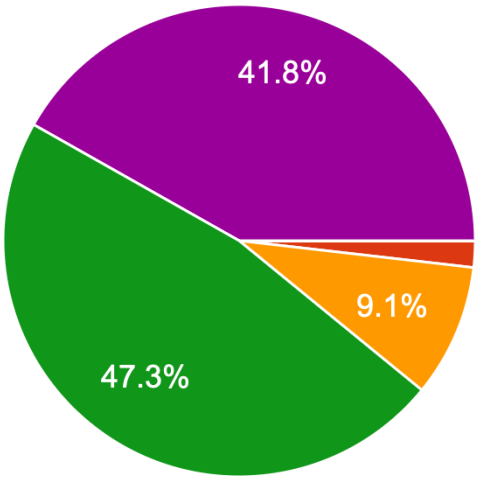
55 responses



- Yes, I enjoy them very much.
- The tutorials are above average
- So so. Pretty ambivalent about it.
- The tutorials are below average. They don't help me much.
- Tutorials suck! They are a waste of time.
- I have not attended the lectures/tutorials so, no comment.

Are the problem questions helping you learn?

55 responses



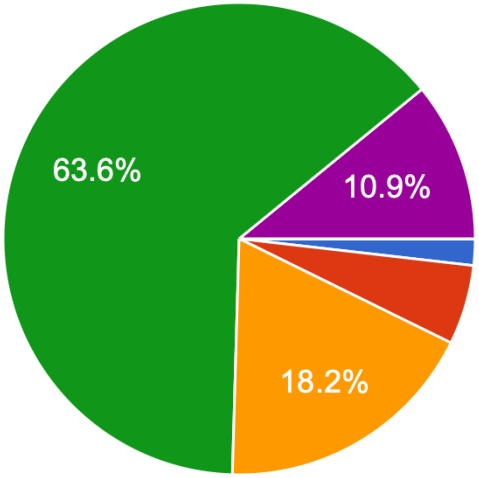
- No, the problem sets are terrible.
- The problem sets are bad and not useful.
- Meh. Don't feel strongly either way.
- The problems sets are good and help me understand the material better. But…
- The problem sets are great! They help me consolidate the material we learn i…
- I've never done the problem sets so, no comment.

Tutorial: Comments/Suggestions

- "*Can Go Faster*" **v.s.** "*Slow Down*"
- "*Too much math details, wasting time a bit*" **v.s.** "*Go slower and explain the steps in more detail*"
- Style Changes:
  - "Convey the main concept" – OK
  - "More coding exercises" – Depends on the material
  - "More questions for practice" – Trying to balance course load
- "tutorial answers in advance" – Please ask on piazza.
- "Recordings"
- "Repeat most important ideas before the tutorial".

Overall, what is your impression of CS5340?

55 responses



- It's horrible. Wish I had never taken it.
- Bad Bad Bad. It's worse than the other modules I'm taking.
- It's ok. Just another class.
- CS5340 is cool! I like it!
- CS5340 is great! Best class at NUS so far!
- I've no opinion since I don't participate in the class.

Course: Comments/Suggestions

- Course Difficulty
  - “pathway/resource to follow or read/do that can help to break things down…”
- “Pls use blue marker instead of red :))” – OK
- “more office hours for the project?... With TA” – OK
- Under Discussion but not for this semester
  - “Add more prerequisites for the courses”
  - “team project … should be assigned after we have learned.”
  - “adjust learning curve”

Thank you for your comments and suggestions.

Questions?

https://pollev.com/haroldsohsoo986

Homework. ☺

- Watch the lecture videos on Factor Graphs and submit your abstracts.
- When you come back:
  - Quiz results.
  - What we will do next ½
  - Linear Gaussian Models.