Final project:

Final project: Modeling Human Intelligence with Networks

Premise and Goal

 \blacksquare I bet you've learnt a lot here,

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

What you should do

• This time: **individual** presentations / 7 minutes each.

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- You can team up!

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.
- 3 Computer science projects: no two people/teams with the same project

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- 1 This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.
- 3 Computer science projects: no two people/teams with the same project (same topic → teaming up).

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.
- 3 Computer science projects: no two people/teams with the same project (same topic → teaming up).
- ① Other projects: same topic is ok, same presentations are not.

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.
- 3 Computer science projects: no two people/teams with the same project (same topic → teaming up).
- Other projects: same topic is ok, same presentations are not.
- 6 You'll hand in papers about your topic.
 - Formatting: 2-4 pages, typed, font size 12, single line spacing.

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.
- 3 Computer science projects: no two people/teams with the same project (same topic → teaming up).
- Other projects: same topic is ok, same presentations are not.
- 6 You'll hand in papers about your topic.
 - Formatting: 2-4 pages, typed, font size 12, single line spacing.
 - ▶ Beauty/organization counts

Premise and Goal

- I bet you've learnt a lot here, now I wanna learn something! haha
- Let's do a simple research project. I'll give you a title and you will be free to learn something about it and present it to us.

- This time: **individual** presentations / 7 minutes each.
- 2 You can team up! Similar topics, $8 \times n$ minutes.
- 3 Computer science projects: no two people/teams with the same project (same topic → teaming up).
- Other projects: same topic is ok, same presentations are not.
- 6 You'll hand in papers about your topic.
 - Formatting: 2-4 pages, typed, font size 12, single line spacing.
 - ▶ Beauty/organization counts (pictures and diagrams too).

Final Project Topics

Philosophy

- Is Strong AI possible? The Chinese Room Argument, Syntax vs Semantics, What is intentionality? The Mind and the Body. (in https://plato.stanford.edu/entries/chinese-room/, Section 5)
- Ethical AI What are the main ehical problems about AI? How would they be solved in the future? Is it worth it to have AI if we can't solve these problems?
- The Beautiful AI What is creativity? Is AI made art creative/beautiful? If not, will it be? How was ML used here?

History

■ The History of Intelligence – How the idea of intelligence came about over the course of history? What is the current view of it? How about the history of artifitial intelligence?

Final Project Titles

Politics

■ Political AI — Can AI interfere in politics somehow (for the good or for the bad)? Is it doing it right now? Can AI influence public opinion?

Biology

- The Other AI: What can we learn from "Animal Intelligence" Are we at least better than the animals? What do animals do that we wished we could do? Did Deep Learning help with anything here?
- The Brain and the Intelligence How does information travel in the brain? How much do we know about the brain and its relationship to intelligence? Is the neuronal model we studied here accurate?

Final Project Titles

Mathematics

■ The Math of AI — What is (Stochastic) Gradient Descent? How do the loss function landscapes look like? How back propagation works?

Computer Science (Projects)

- Image to Image translation (Pix2Pix) https: //www.tensorflow.org/beta/tutorials/generative/pix2pix
- DeepDream https://www.tensorflow.org/beta/tutorials/
 generative/deepdream
- Style transfer https://www.tensorflow.org/beta/ tutorials/generative/style_transfer
- Image Captioning https://www.tensorflow.org/beta/tutorials/text/image_captioning