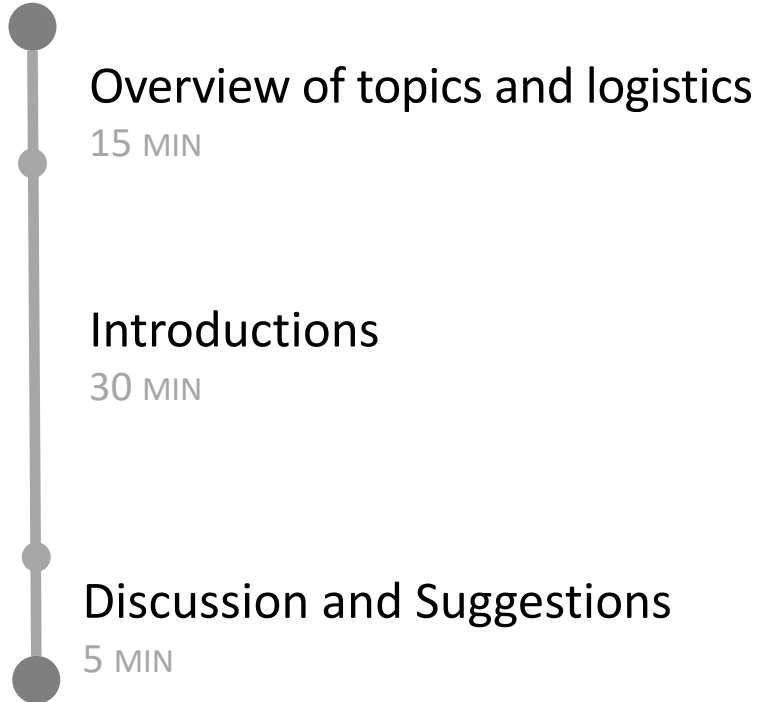


Causal Representation Learning Reading Group: Overview and Introductions

12/01/21

The meeting will begin at 5 minutes past the hour

Agenda



What is a Causal Representation?

- Part of our goal will be to develop opinions and answers to this question
- From “Towards Causal Representation Learning” (Scholkopf et al., 2021): A causal representation should “***support intervention, planning and reasoning***”
- A potential definition: In a **causal representation**, the effects of actions on a system correspond to simple operations. For example, an action might be captured by (1) an intervention on a small number of variables, or, even more simply, by (2) a translation or other geometric operation.

Topics

- Identifiability of latent causal representations
- Related paradigms to Causal Representation Learning:
 - Object-centric learning
 - Learning disentangled representations
 - Representation learning for RL
- Advantages of causal representation learning
 - Domain generalization and domain adaptation
 - Sample efficiency
 - Interpretability
- ...

Logistics

- We will meet once every two weeks for one hour. Meetings are on Wednesdays at 2pm EST, until further notice.
- We will use a Github repo (<https://github.com/csquires/causal-rep-learning-reading-group>) as our landing page. This has links to:
 - A Slack workspace (causal-representation.slack.com)
 - A schedule and a page for suggesting papers.
- Please sign up for presentation/discussant slots!
 - **Rule 1:** Authors are not allowed to present their own papers.
- Meetings will be recorded and saved in a Dropbox folder which is only accessible to reading group participants. Please email to opt out of being recorded.

Paper Presentations

- Aim for your presentation to be 30 minutes.
 - During the presentation, questions should be asked in the chat. A moderator (me) will read questions as they come up during the presentation, and we will aim to be done after 45 minutes, leaving 15 minutes for general discussion.
 - Reading group participants are expected to read each paper beforehand.
- Presentations should roughly adhere to the following outline:
 - **5-10 minutes:** Problem setup and contextualizing with respect to related work.
 - **10-15 minutes:** Spotlight difficult and/or novel conceptual and technical points.
 - **5-10 minutes:** Open questions, points of confusion, and directions for future work.

Introductions

- Name
 - Current location
 - Current institution and position, advisor(s)/collaborators
 - Previous institutions/degrees
 - Previous research topics
 - What you're working on now
- Caltech
 - CMU
 - Columbia
 - Facebook
 - IBM
 - Johns Hopkins
 - Mila
 - MIT
 - Qualcomm
 - ServiceNow
 - Technion
 - University of Amsterdam
 - University of California, Berkeley
 - University of Copenhagen
 - University of Michigan

If your institution is not on the list, please send it in the chat

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