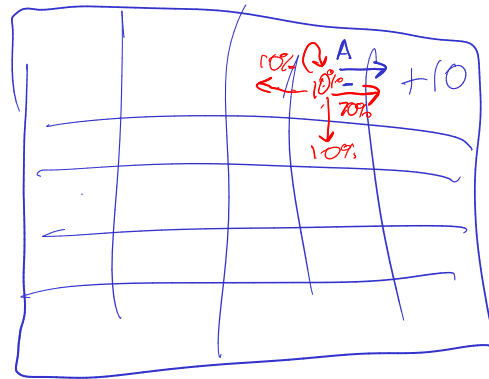


# ASEN 6519

Advanced Survey of Sequential Decision Making

AKA DMU++

Is Q-learning guaranteed to converge?



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Under what conditions?

Which is more sample-efficient?  
Model-based or Model-free  
Reinforcement Learning?

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Reinforcement Learning?

Why isn't my PPO working?



How much computational power did AlphaGo use?



How much computational power did  
AlphaGo use?

Do you need less for chess?



How much computational power did  
AlphaGo use?

Do you need less for chess?

How much more do you need to learn  
StarCraft?



# Learning Objectives

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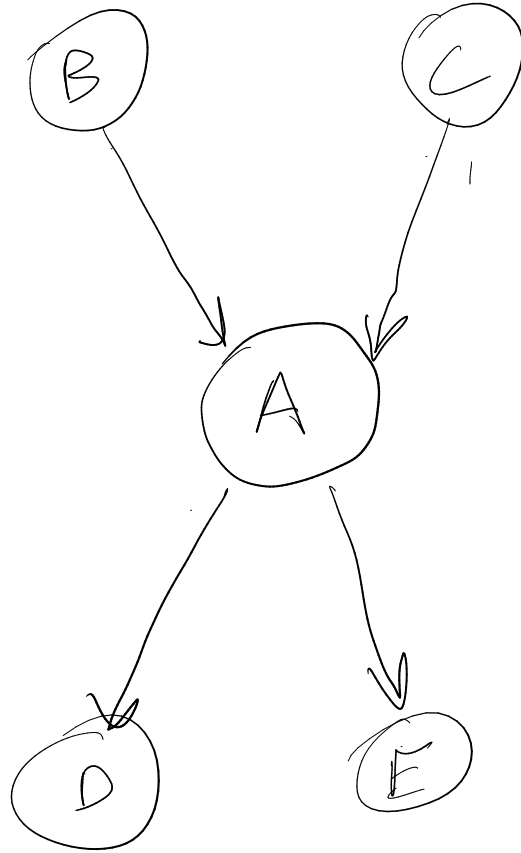
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2. Theoretical tools
3. Communication (hard!)
4. Open research topics (know and investigate)

# The Citation DAG of Knowledge



# How?

(Assignments)

- Presentations and in-class discussions (2 each)
- Understanding Assessments
- Blog Post and Oral Exam (experimental)
- Final Project

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(Assignments)

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**Excellence** and **Engagement** are required!



# Course Hub and Schedule

<https://edstem.org/us/courses/83529>

# Logistics: Survey

**Will send out tomorrow;  
due by Midnight Monday**

Volunteers for first two presentations!

# Logistics: Paper Access

<https://libguides.colorado.edu/strategies/offcampus/browser>

# Advice: How to read a paper

<https://web.stanford.edu/class/ee384m/Handouts/HowtoReadPaper.pdf>



# Optional Presentation Template

<https://slides.com/zacharysunberg/deck-7a5c76>

# Presentation Tips

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People remember stories, and we will all be better off if you can make it engaging.

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- Information density is crucial - use appear animations to guide attention

# Auditing

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- Please email me and make sure you are added to Ed
- I may request that you contribute a paper presentation.

# Quick Intro

- Name
- Station (e.g. third year grad student in AERO)
- What you want to learn about
- Background
- Research focus