Interests:

* Community Regularization of Visually-Grounded Dialogue, Learning Transferable Cooperative Behavior in Multi-Agent Teams, Towards Better Interpretability in Deep Q Networks, Deep reinforcement learning transparency
* The last two papers about question bot answering between multiple agents and the one about MARL were really interesting.

Deep reinforcement learning transparency (paper 1):

* Made deep reinforcement learning model that displayed images (kinda like heatmaps) for which objects it saw colored based on importance so that people can better understand the decisions that the AI is making
* They tested how interpretable their model was using PacMan and brought in people to see if the graphs they created were interpretable

Towards Better Interpretability in Deep Q Networks:

* Made deep reinforcement learning model
* Made clusterings based on the model’s decisions to see when certain keys were pressed (left button, right button, etc.) based on that action/state pairs reward
* They think it will be useful for those building deep reinforcement learning models to understand how their models are reacting during training
* Interesting future works talk about identifying model biases in training automatically instead of hard coding a different test case and seeing how it performs and also about using GANs or other ML methods instead to not overft the training data

Community Regularization of Visually-Grounded Dialogue:

* Have a Q-bot (robot) talk to a community of other bots (A-bots) so that it isn’t biased by a single bot and have the A-bots try to explain to the Q-bot what different images are like (could also use multiplew q-bots and 1 a-bot)
* Goal is for Q-bot to be able to reconstruct and select the images if asked for them
* They view using the multiple bots as a form of regularization, forcing the bots to keep using regular language and not invent a unique language specific to only 1 pair of bots which often happens
* Does Q bot randomize questions? (Because if not then there will be an optimal question answer series and it will only be able to differentiate between 512 images I think: actually not true because the answer always depends on the A bots answers which should be different)

Learning Transferable Cooperative Behavior in Multi-Agent Teams:

* Multi-agent reinforcement learning (MARL)
* Agents are connected by edges in a graph which is how they send messages to each other about the entities and other agents in the environment. Occasionally during training edges are intentionally severed to add regularization and help the agents decide what to do in real cases of communication dropout (no communication between agents due to many possible errors)