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Adaptive Real-time Feedback for Group Discussions using Reinforcement Learning

Real-time feedback has the potential to significantly improve group dynamics in collaborative environments. However, delivering timely and context-aware interventions remains a challenge especially in the absence of annotated data. In this work we explore the use of reinforcement learning (RL) to provide real-time, adaptive feedback at the group level that promotes effective group dynamics.
We develop a pipeline that combines a further pretrained and fine-tuned CamemBERT model for behavior recognition with a Deep Q-learning agent trained on simulated group dynamics. These simulations include a variety of group profiles with different responsiveness and interaction styles, enabling the agent to learn more robust intervention strategies. While the initial policy follows a hand-crafted rule, the agent learns to time its interventions more effectively. Preliminary experimental results show that the learned policy improves upon static rules demonstrating the potential of reinforcement learning to provide adaptive feedback strategies.

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