

Motivation of the papers

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In this course I will review three papers that employ Graph Neural Network techniques to generate node embeddings on temporal interaction networks. The papers that I have selected to review and the reason why I selected to review these papers are the following:

- *Streaming Graph Neural Networks* [2]: In this paper the authors propose a novel graph neural network model on temporal interaction networks. The authors modify the existing Long Short Term Memory (LSTM) neural networks to capture the evolution of the user preferences over time.
- *Learning Temporal Interaction Graph Embedding via Coupled Memory Networks* [3]: In this paper the authors exploit memory networks to efficiently capture the evolution of the node properties in the learned embeddings. Based on my knowledge, this is the first time that a graph neural network approach exploits memory networks.
- *End-to-End Deep Reinforcement Learning based Recommendation with Supervised Embedding* [1]: In this paper the authors investigate the impact of the node embeddings in the recommender systems that employ reinforcement learning strategies. Based on their findings, the authors propose several architectures on how to improve the node embeddings over time.

References

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2. Ma, Y., Guo, Z., Ren, Z., Tang, J., Yin, D.: Streaming graph neural networks. In: SIGIR. p. 719–728 (2020)
3. Zhang, Z., Bu, J., Ester, M., Zhang, J., Yao, C., Li, Z., Wang, C.: Learning temporal interaction graph embedding via coupled memory networks. In: WWW. p. 3049–3055 (2020)