What's Next

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March 24th, 2021

Learned Graph Principles

- March 20th
  - Belief propagation, DeepWalk & node2vec
  - GCN & GraphSAGE & GAT, GraphRNN for graph generation
- March 24th
  - GNN sampling strategies, GNN adversarial attacks and defenses
  - GNN on complex graphs, GNN in natural language processing

- The lecture phase has come full cycle
- Do you have any ideas or interests till now?

Report #6 @ March 28th night

- Task: Semi-supervised node classification in a graph

- Dataset: Cora
  - Match paper with topic
  - 2k nodes, 5k links
  - 7-class classification, only 20 nodes in each class with given labels
  - Exact experiment settings with the benchmark in papers

- Resources: Cora_real.zip

cora.papers

- Each line
  - Paper ID
  - 1403 binary values, whether a word appears in the paper
    - Feature vector
  - Paper label
    - 7 classes + Unknown

- 2708 lines

cora.cites

- Each line
  - <ID of cited paper><ID of citing paper>

- 5429 lines

cora.answer_sample

- Each line
  - \<paper ID>\<class name>

- \<class name> has to be an exact match!
- You can print extra lines, as long as you answer all the 'Unknown's.

- Send in the QQ group as 'cora_answer_lqy_k.txt' for k-th trial

Requirement

- Pytorch, gpu implementation
- Attempt GCN, GraphSAGE, GAT models
- Pick the best and tune the parameters

Report #6 @ March 28th night?

- Your report should include
  - (best) Model architecture
  - (best) Implementation
  - (best) Parameter choices
  - Best results
  - Any tips to share with us
  - …

Thx for Attention

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