Fall 2017 Summary

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Indirect Supervised Relation Extraction

• ReQuest: Indirect Supervision for Relation Extraction using QA Pairs.
  • Hypothesis from QA:
    • A positive QA entity mention pair’s embedding vector should be more similar (closer in the low-dimensional space) to any other positive QA entity mention pair, than to any negative QA entity mention pair of the same question.
  • Incorporate knowledge from both QA and RE datasets to jointly learn feature representations to infer label of test instances
  • Accepted to WSDM’18
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• Follow-up: improve scalability & generalization
  • Leverage hidden insights from more general QA datasets (e.g., SQuAD, TriviaQA, etc):
    • In a QA pair, the relation asked by the question should be the same as the relation answered by the answer sentence.
  • Experiment with more RE models (tough baselines, Zhang et al., 2017) & datasets (NYT, KBP, TACRED)
  • Current Status: no significant improvement observed yet; need more error analysis and experiments
Faceted Taxonomy Construction

- Extend SetExpan (accepted to ECML-PKDD’17) to HiExpan:
  - Current Pipeline:
    - In each iteration:
      - Use SetExpan to expand the children set under each parent node in a hierarchy
      - Use a modified version of SetExpan to get the seeds for each parent node that’s not provided by the user
    - At the end of each iteration:
      - If conflicts detected, resolve conflicts and prune the tree
      - Store nodes being pruned and treat as negative examples for next iteration
    - Stop if no change or reach maximum number of iterations
  - Current Status:
    - Preliminary results on Wiki
    - Need to refine the current pipeline (conflict resolution, tree pruning, negative example handling)
Miscellaneous

• Submitted a paper to KBCOM workshop in WSDM’18:
  • Improving Question Answering Sentence Ranking by Rank Propagation
• Prepared public code, project page & camera-ready for ReQuest
• Took courses in NLP, Information Retrieval
• Visitor Coordinator
• PhD application