

2021 第二季度总结

Xiangqing Shen
xiangqing.shen@njust.edu.cn

Text Mining Lab (NUSTM)
Nanjing University of Science and Technology

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工作情况

上季度计划

- 进行事件抽取任务的文献调研，文献阅读的入门工作

计划主要完成情况（按时间顺序）

- 季度初做了一个较系统全面的知识图谱 Slides 并做了组会报告
- 阅读事件抽取相关资料（博客，Slides）、相关论文（7 篇），收集相关数据集（2 个）
- 完成三门课的课程作业，包括论文复现（1 个）、论文翻译（1 篇）、小论文（1 篇）和相关实验报告（4 份）
- 期间转换方向重点，阅读李忠阳大论文（1 篇）、小论文（6 篇）和其他事理图谱相关论文（7 篇）
- 其他穿插任务：Few-shot Learning 综述（1 篇）、深度强化学习书籍（1 部）、变分推断……

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知识图谱组会报告 (第1周)

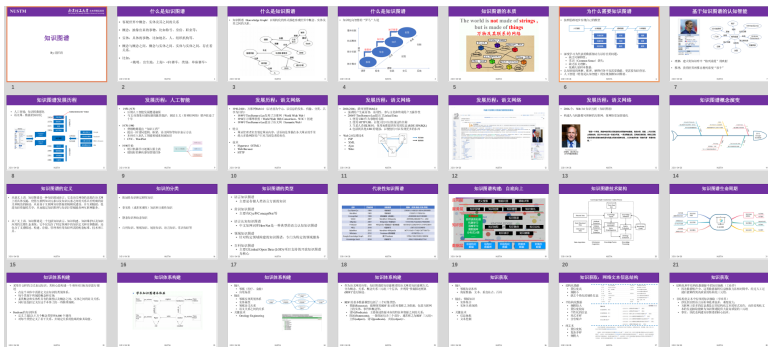


Figure 1: 知识图谱 Slides

一个较为系统全面的知识图谱的专题报告。

事件抽取调研和入门 (第 2-5 周)

| My Library | Title | Creator | Date | Publisher |
|-----------------------------------|--|---------------------|------------|------------------------|
| Analysis | A Human-AI Loop Approach for Joint Keyword Discovery and Expectation Estimation in Micropost Eve... | Bhardwaj et al. | 2019-12-02 | |
| Entity and Relation Extraction | A Survey of Event Extraction From Text | Xiang and Wang | 2019 | |
| Event Extraction | A Two-Step Approach for Implicit Event Argument Detection | Zhang et al. | 2020-07 | Association for Co... |
| Entity Graph | Adversarial Training for Weakly Supervised Event Detection | Wang et al. | 2019-06 | Association for Co... |
| Knowledge Graph | Biomedical Event Extraction as Multi-Turn Question Answering | Wang et al. | 2020-11 | Association for Co... |
| Graph Neural Network | Biomedical Event Extraction as Sequence Labeling | Rampori et al. | 2020-11 | Association for Co... |
| Knowledge Distillation | Biomedical Event Extraction with Hierarchical Knowledge Graphs | Huang et al. | 2020-11 | Association for Co... |
| Language Models | Connecting the Dots: Event Graph Schema Induction with Path Language Modeling | Li et al. | 2020-11 | Association for Co... |
| Machine Learning | COSMIC: Commonsense knowledge for eMotion Identification in Conversations | Ghosal et al. | 2020-11 | Association for Co... |
| Machine Reading Comprehension | Cost-sensitive Regularization for Label Confusion-aware Event Detection | Lin et al. | 2019-07 | Association for Co... |
| Memory Networks | Cross-lingual Structure Transfer for Relation and Event Extraction | Subburathnam et al. | 2019-11 | Association for Co... |
| Multimodal Tasks | Cross-media Structured Common Space for Multimedia Event Extraction | Li et al. | 2020-07 | Association for Co... |
| Natural Language Generation | DCFEE: A Document-level Chinese Financial Event Extraction System based on Automatically Labeled... | Yang et al. | 2018-07 | Association for Co... |
| Natural Language Inference | Discourse as a Function of Event: Profiling Discourse Structure in News Articles around the Main Event | Choubey et al. | 2020-07 | Association for Co... |
| Natural Language Understanding | Distilling Discrimination and Generalization Knowledge for Event Detection via Delta-Representation... | Lu et al. | 2019-07 | Association for Co... |
| Question Generation | Doc2DAG: An End-to-End Document-level Framework for Chinese Financial Event Extraction | Zheng et al. | 2019-11 | Association for Co... |
| Reasoning | Document-Level Event Role Filler Extraction using Multi-Granularity Contextualized Encoding | Du and Cardie | 2020-07 | Association for Co... |
| Research Paper Writing Collection | DuEE: A Large-Scale Dataset for Chinese Event Extraction in Real-World Scenarios | Li et al. | 2020 | Springer Internatio... |
| Table to Text | Edge-Enhanced Graph Convolution Networks for Event Detection with Syntactic Relation | Cui et al. | 2020-11 | Association for Co... |
| My Publications | Entity, Relation, and Event Extraction with Contextualized Span Representations | Wadden et al. | 2019-11 | Association for Co... |
| Duplicate Items | Event Detection with Multi-Order Graph Convolution and Aggregated Attention | Van et al. | 2019-11 | Association for Co... |
| Unfiled Items | Event Detection with Trigger-Aware Lattice Neural Network | Ding et al. | 2019-11 | Association for Co... |
| Trash | Event Detection without Triggers | Liu et al. | 2019-06 | Association for Co... |
| | Event Detection: Gate Diversity and Syntactic Importance Scores for Graph Convolution Neural Netw... | Lai et al. | 2020-11 | Association for Co... |
| | Event Extraction as Machine Reading Comprehension | Liu et al. | 2020-11 | Association for Co... |
| | Event Extraction as Multi-Turn Question Answering | Li et al. | 2020-11 | Association for Co... |
| | Event Extraction by Answering (Almost) Natural Questions | Du and Cardie | 2020-11 | Association for Co... |
| | Event Extraction from Unstructured Amharic Text | Tadesse et al. | 2020-05 | European Language... |
| | Exploring Interpretability in Event Extraction: Multitask Learning of a Neural Event Classifier and an ... | Tang et al. | 2020-07 | Association for Co... |
| | Exploring Pre-trained Language Models for Event Extraction and Generation | Yang et al. | 2019-07 | Association for Co... |
| | Extending Event Detection to New Types with Learning from Keywords | Lai and Nguyen | 2019-11 | Association for Co... |
| | Extensively Matching for Few-shot Learning Event Detection | Lai et al. | 2020-07 | Association for Co... |

Figure 2: 本地维护的事件抽取论文列表

收集的常用数据集为 ACE2005、BioNLP 等；博客、Slides 等略。

模式识别课程作业 (第 3-4 周)

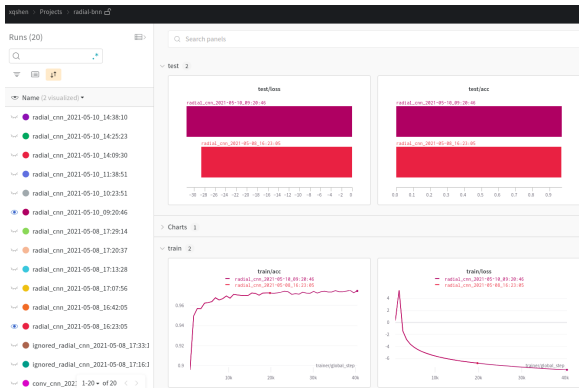


Figure 3: 模式识别课程作业

代码: <https://github.com/RomanShen/radial-bnn>

结果: <https://wandb.ai/xqshen/radial-bnn?workspace=user-xqshen>

FSL、RL、VI、 \LaTeX (第 4-7 周)

Figure 4: FSL 综述阅读



Figure 5: DeepRL 书籍阅读



Figure 6: Beamer 模版

这段时间根据需要穿插完成了一些其他任务，如针对事件抽取任务阅读了一篇 FSL 的综述，系统学习了强化学习， \LaTeX 并改编了一个 NUSTM 主题的 Beamer 模版，系统学习了变分推断，完成了智能系统的课程作业。

CCKS2021 数据收集（第 7 周）

全部文件 > 自然语言处理 > cck2021

| 文件名 | 大小 | 修改时间 |
|------------|--------|------------------|
| 评测10 | - | 2021.06.04 15:49 |
| 评测11 | - | 2021.06.04 15:59 |
| 评测12 | - | 2021.06.04 15:45 |
| 评测14 | - | 2021.06.04 15:50 |
| 评测15-任务1&2 | - | 2021.06.04 15:26 |
| 评测5 | - | 2021.06.04 15:54 |
| 评测6 | - | 2021.06.04 15:37 |
| 评测9 | - | 2021.06.04 15:56 |
| 任务13 | - | 2021.06.04 15:58 |
| 评测任务列表.png | 4.00KB | 2021.06.04 15:44 |

Figure 7: CCKS2021 数据集收集

目前仅公布训练集、部分验证集，测试集没有公布，本月底预计全部公布，届时可以收集完毕。
目前数据全部存放在百度网盘中。

事理图谱的调研和入门（第 7-11 周）

工作内容

- 大量阅读事理图谱论文：包括李忠阳的博士论文，小论文和相关重要的事理图谱相关的论文。
- 维护了组内的事理图谱相关的论文列表。
- 根据论文阅读过程中的需要复习了强化学习。
- 完成了海量数据分析的课程作业。

AllenAI 实验室工作跟进（第 12-周）

工作内容

- 开始跟进 AllenAI 实验室的工作，目前阅读相关论文 3 篇

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周报展示

| NUSTM 研究组周报 | | | | |
|-------------|--|----|-----------------------|--|
| 姓名 | 沈洪涛 | 日期 | 2021/06/17-2021/06/22 | |
| 本周计划 | <p>继续按计划，通过大量阅读这几篇与事件抽取相关的英文论文，总结：</p> <ol style="list-style-type: none"> 1. 这些论文针对事件抽取这一任务 setting 提出了什么问题，动机是什么。 2. 针对提出的问题和动机，这些论文通过什么方法解决了问题，可以进行分类。 3. 是否是真正意义上的有效地解决了这些问题，可以进一步改进吗。 <p>这些论文都了解哪些数据集，对哪些数据集有哪些特点，是否可以获取，并先把上周未完成的 few shot learning 的综述论文读完，感觉事件抽取任务的少样本学习特别有意义。</p> | | | |
| 完成情况 | <ol style="list-style-type: none"> 1. 阅读了 3 篇论文。 2. 完成了模式识别的课程作业。 3. 学习了神经网络的多维数据。 | | | |
| 下周计划 | <ol style="list-style-type: none"> 1. 完成物智能系统的作业。 2. 最少阅读三篇事件抽取的相关论文。 | | | |
| 收获/感悟 | | | | |
| 参考文献 | <p>[1] Wang, Y., Liu, Q., Ren, J., Li, L.M., 2020. Generalizing from a Few Examples: A Survey on Few-shot Learning. <i>ACM Comput. Surv.</i> 53, 62:1–62:34. https://doi.org/10.1145/3386252</p> <p>[2] Sap, R., Berzic, E., Choi, Y., Smith, A., Pennachyn, J., 2020. Recursion versus Imagination: Exploring Human Reasoning and Cognition via Neural Language Models. In: <i>Proceedings of the 20th Annual Meeting of the Association for Computational Linguistics</i>. Presented at the ACL 2020, Association for Computational Linguistics, Online, pp. 1859–1878. https://doi.org/10.18632/1/2020.ac1-main.178</p> <p>[3] Liu, J., Chen, T., Zhou, J., 2020. Knowledge Enhanced Event Causality Identification with Mention-Relating Generalizations. Presented at the Twenty-Ninth International Joint Conference on Artificial Intelligence, pp. 3008–3014. https://doi.org/10.21963/ijcai.2020-439</p> | | | |
| 课程/项目 | 18-4 | | | |

Figure 8: 周报展示 1

| NUSTM 研究组周报 | | | | |
|-------------|---|---------|-----------------------|--|
| 姓名 | 沈洪涛 | 日期 | 2021/06/21-2021/06/26 | |
| 本周计划 | <ol style="list-style-type: none"> 1. 第一个计划是继续按照之前规划完成第二次的大论文阅读。 2. 继续第一遍大论文阅读完成之后的后续小论文阅读计划。 | | | |
| 完成情况 | <ol style="list-style-type: none"> 1. 李品阳的论文第二遍阅读完成。 2. 根据时间顺序和重要性选择阅读了两篇论文，并阅读了相关源码和数据集。 3. 计划继续记时间顺序和重要性对应的后续小论文阅读计划。 | | | |
| 下周计划 | <ol style="list-style-type: none"> 1. 继续阅读白成节的小论文。 2. 整理 ACL2021 与事件知识图谱或其他领域的论文。 | | | |
| 收获/感悟 | | | | |
| 参考文献 | <p>[1] Li, Y., Taylor, D., Hochreiter, M., Zemel, R., 2017. Gated Graph Sequence Neural Networks. <i>arXiv:1511.06489 [cs, stat]</i></p> <p>[2] Liu, Z., Ding, X., Liu, T., 2020. Constructing Narrative Event Evolutionary Graph for Script Event Prediction. In: <i>Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence</i>. Presented at the Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI-HI), International Joint Conferences on Artificial Intelligence Organization, Stockholm, Sweden, pp. 4291–4297. https://doi.org/10.24963/ijcai.2018-554</p> | | | |
| 课程 | 课程时间 | 课程原因、地点 | | |
| 其他事项 | | | | |

Figure 9: 周报展示 2

| NUSTM 研究组周报 | | | | |
|-------------|---|---------|-----------------------|--|
| 姓名 | 沈洪涛 | 日期 | 2021/07/05-2021/07/10 | |
| 本周计划 | <ol style="list-style-type: none"> 1. 继续计划，这一周主要是 AhoAI 实验的工作，主要已经做了相关工作。 2. 本周继续阅读，阅读相关论文。 3. 阅读过程中整理更新论文列表。 4. 整理第一遍论文学习的情况。 | | | |
| | <ol style="list-style-type: none"> 1. 阅读了四篇英文论文。 2. 论文列表已更新。 3. 强化学习概念和神经网络重新梳理了一下，形成完整梳理图，可后续继续引用。 | | | |
| 完成情况 | | | | |
| 下周计划 | <ol style="list-style-type: none"> 1. 进一步跟进 AhoAI 实验的工作，阅读相关论文。 2. 阅读过程中整理更新论文列表。 3. 重新梳理一下强化学习的概念。 | | | |
| | | | | |
| 收获/感悟 | | | | |
| 参考文献 | <p>[1] Li, Z., Ding, X., Liu, T., Su, J.E., Yu, Y., 2020. Gated Generation of Cause and Effect. In: <i>Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence</i>. Presented at the Twenty-Ninth International Joint Conference on Artificial Intelligence and Southeast Asia Pacific Rim International Conference on Artificial Intelligence (IJCAI-APRIS-20), International Joint Conferences on Artificial Intelligence Organization, Yokohama, Japan, pp. 3829–3838. https://doi.org/10.24963/ijcai.2020-502</p> <p>[2] Liu, Z., Su, Y., Zhu, K.G., Ding, X., Wang, Z., 2019. Commonsense reasoning between short texts. In: <i>Proceedings of the Fifteenth International Conference on Principles of Knowledge Representation and Reasoning</i>, KR '19. AAAI Press, Cape Town, South Africa, pp. 621–636.</p> | | | |
| | | | | |
| 课程 | 学习时间 | 课程原因、地点 | | |
| 其他事项 | | | | |

Figure 10: 周报展示 3

本地文献管理

| My Library | Title | Creator | Date | Publisher |
|--------------------------------|--|--------------------|----------------|-------------------------|
| Analysis | 1. "I'm Not Mad": Commonsense Implications of Negation and Contradiction | Jiang et al. | 2021-06 | Association for Co... |
| Entity and Relation Extraction | 2. Co-Matching Model for Multi-choice Reading Comprehension | Wang et al. | 2020-07 | Association for Co... |
| Event Extraction | 3. A Comprehensive Survey on Graph Neural Networks | Wu et al. | 1/2021 | |
| Event Graph | 4. A Frustratingly Easy Approach for Joint Entity and Relation Extraction | Zhang and Chen | 2020-10-24 | |
| Event-Driven Learning | 5. A Generative Model for Joint Natural Language Understanding and Generation | Teng et al. | 2020-07 | Association for Co... |
| Graph Neural Network | 6. A Human-AI Loop Approach for Joint Keyword Discovery and Expectation Estimation in Microport E... | Bhardwaj et al. | 2019-12-02 | |
| Knowledge Distillation | 7. A Joint Neural Model for Information Extraction with Global Features | Lin et al. | 2020-07 | Association for Co... |
| Knowledge Graph | 8. A Multimodal Late Fusion Model for E-Commerce Product Classification | Bi et al. | 2020-06-13 | |
| Language Models | 9. A Novel Cascade Binary Toping Framework for Sentiment Tree Extraction | He et al. | 2020-07 | Association for Co... |
| Machine Learning | 10. A Probabilistic Formulation of Unsupervised Text Style Transfer | He et al. | 2020-04-29 | |
| Machine Reading Comprehension | 11. A Relational Memory-based Embedding Model for Triple Classification and Search Personalization | Nguyen et al. | 2020-07 | Association for Co... |
| Memory Networks | 12. A Survey of Event Extraction From Text | Jiang and Wang | 2019 | |
| Multimodal Tasks | 13. A Survey on Knowledge Graphs: Representation, Acquisition and Applications | Ji et al. | 2021-04-01 | |
| Natural Language Generation | 14. A Two-Step Approach for Implicit Event Argument Detection | Zhang et al. | 2020-07 | Association for Co... |
| Natural Language Inference | 15. Adversarial Training for Weakly Supervised Event Detection | Wang et al. | 2019-06 | Association for Co... |
| Natural Language Understanding | 16. An Empirical Comparison on Imitation Learning and Reinforcement Learning for Paraphrase Generation | Du and Ji | 2019-11 | Association for Co... |
| Question Generation | 17. Answering Complex Open-Domain Questions Through Iterative Query Generation | Qi et al. | 2019-11 | Association for Co... |
| Reasoning | 18. Aspect-Aware Multimodal Summarization for Chinese E-Commerce Products | Li et al. | 2020/04/03 | |
| Research Paper Writing Course | 19. ATOMIC: An Atlas of Machine Commonsense for If-Then Reasoning | Sap et al. | 2019-02-07 | |
| Text to Text | 20. BERT: Denoising Sequence-to-Sequence Pre-training for Natural Language Generation, Translation, ... | Lewis et al. | 2020-07 | Association for Co... |
| My Publications | 21. BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding | Devlin et al. | 2019-05-24 | |
| Duplicate Items | 22. Biomedical Event Extraction as Sequence Labeling | Ramponi et al. | 2020-11 | Association for Co... |
| Unlabeled Items | 23. Biomedical Event Detection with Hierarchical Knowledge Graphs | Huang et al. | 2020-11 | Association for Co... |
| Trash | 24. Bridging the Structural Gap Between Encoding and Decoding for Data-To-Text Generation | Zhao et al. | 2020-07 | Association for Co... |
| | 25. COMET: Commonsense Transformers for Automatic Knowledge Graph Construction | Bosselut et al. | 2019-07 | Association for Co... |
| | 26. Commonsense causal reasoning between short texts | Luo et al. | April 25, 2016 | AAAI Press |
| | 27. Complex Question Decomposition for Semantic Parsing | Zhang et al. | 2019-07 | Association for Co... |
| | 28. Connecting the Dots: Event Graph Schema Induction with Path Language Modeling | Li et al. | 2020-11 | Association for Co... |
| | 29. Constructing Narrative Event Evolutionary Graph for Script Event Prediction | Li et al. | 7/2018 | International Joint ... |
| | 30. Continual Relation Learning via Episodic Memory Activation and Reconsolidation | Han et al. | 2020-07 | Association for Co... |
| | 31. corpus.net | | | |
| | 32. COSMIC: Commonsense knowledge for emotion identification in conversations | Ghosh et al. | 2020-11 | Association for Co... |
| | 33. Cost-sensitive Regularization for Label Confusion-aware Event Detection | Lin et al. | 2019-07 | Association for Co... |
| | 34. Cross-layer Structure Transfer for Relation and Event Extraction | Subramaniam et al. | 2019-11 | Association for Co... |
| | 35. Cross-media Structured Common Space for Multimedia Event Extraction | Li et al. | 2020-07 | Association for Co... |
| | 36. Data-to-Text Generation with Content Selection and Planning | Puduppully et al. | 2019/07/17 | |
| | 37. DCFEE: A Document-level Chinese Financial Event Extraction System based on Automatically Labeled ... | Yang et al. | 2018-07 | Association for Co... |
| | 38. DCFEE: Dual Co-Matching Network for Multi-Choice Reading Comprehension | Zhang et al. | 2020/04/03 | |
| | 39. DESBERT: DECODING-ENHANCED BERT WITH DISENTANGLED ATTENTION | He et al. | 2020/09/28 | |
| | 40. Discourse as a Function of Event: Profiling Discourse Structure in News Articles around the Main Event | Choubey et al. | 2020-07 | Association for Co... |
| | 41. Dorsing Discrimination and Generalization Knowledge for Event Detection via Delta-Representation L... | Luo et al. | 2019-07 | Association for Co... |
| | 42. DTA: Deep Knowledge-Aware Network for News Recommendation | Wang et al. | April 10, 2018 | |
| | 43. Do Transformers Need Deep Long-Range Memory? | Rae and Ravi | 2020-07 | Association for Co... |
| | 44. Doc2DAG: An End-to-End Document-level Framework for Chinese Financial Event Detection | Zheng et al. | 2019-11 | Association for Co... |
| | 45. Document-Level Event Role Filler Extraction using Multi-Granularity Contextualized Encoding | Du and Cardie | 2020-07 | Association for Co... |
| | 46. Dual Co-Matching Network for Multi-choice Reading Comprehension | Zhang et al. | 2019-08-20 | |

177 items in this view

Figure 11: 本地文献管理概览

本地文献管理

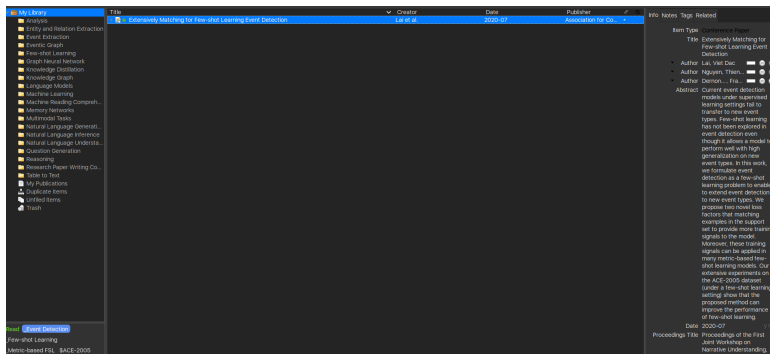


Figure 12: 某种细分类别的文献

本地文献管理

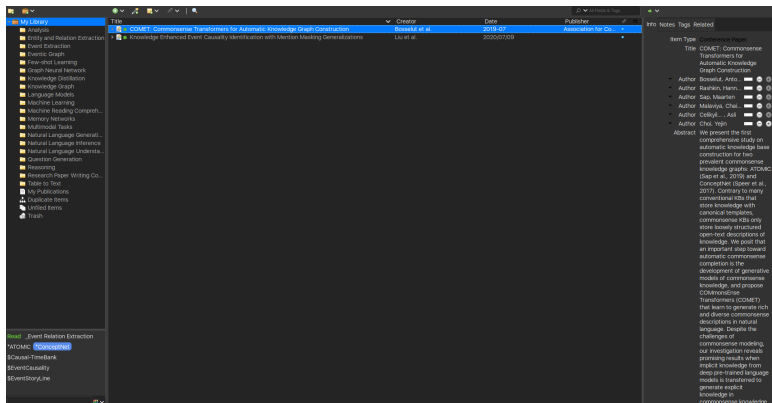


Figure 13: 使用到某种知识图谱的文献

本地文献管理

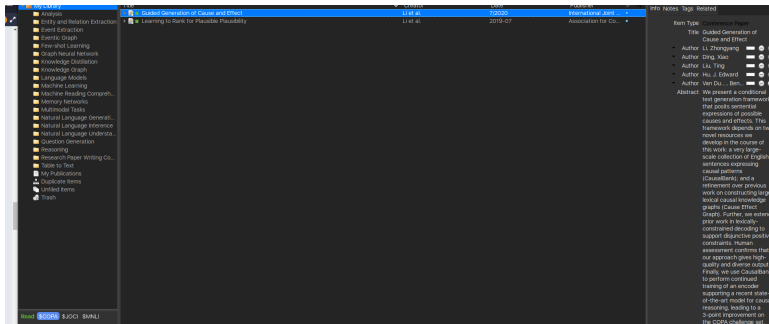


Figure 14: 使用到某种数据集的文献

本地文献管理

The screenshot displays the Zotero application interface. On the left, a sidebar lists various categories under 'My Library', including Analysis, Entity and Relation Extraction, Event Detection, Event Graph, Few-shot Learning, Graph Neural Network, Knowledge Definition, Knowledge Graph, Language Models, Machine Learning, Machine Reading Comprehension, Memory Networks, Multimodal Tasks, Natural Language Generation, Natural Language Inference, Natural Language Understanding, Question Generation, Reasoning, Research Paper Writing, Rule to Text, and My Publications. The main window shows a list of academic papers. The first paper, 'COMET: Commonsense Transformers for Automatic Knowledge Graph Construction' by Bowman et al., is highlighted with a green background. The right pane displays the abstract of this paper.

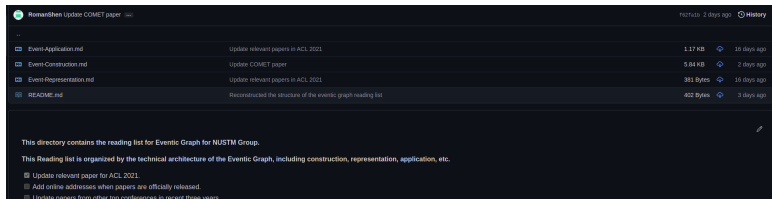
| Title | Creator | Date | Publisher |
|--|----------------|---------------|-------------------------|
| ATOMIC: An Atlas of Machine Commonsense for 8-Then Reasoning | Sap et al. | 2019-02-07 | Association for Co... |
| COMET: Commonsense Transformers for Automatic Knowledge Graph Construction | Bowman et al. | 2019-02 | International Joint ... |
| Constructing Narrative Event Dependency Graph for Single Event Prediction | Li et al. | 7/2019 | Association for Co... |
| Exploring Interpretability in Event Extraction: Multitask Learning of a Neural Event Classifier and an ... | Tang et al. | 2020-07 | Association for Co... |
| Extensively Matching for Few-shot Learning Event Detection | Lai et al. | 2020-07 | Association for Co... |
| Fast Locally Constrained Decoding with Dynamic Beam Allocation for Neural Machine Translation | Park and Vilar | 2018-06 | Association for Co... |
| Deep Graph Sequence Neural Networks | Li et al. | 2017-09-22 | |
| Generalizing from a Few Examples: A Survey on Few-shot Learning | Wang et al. | June 12, 2020 | |
| Generating Reasonable and Diverse Story Ending Using Sequence to Sequence Model with Adv... | Li et al. | 2018-08 | Association for Co... |
| Causal Generation of Cause and Effect | Li et al. | 7/2020 | International Joint ... |
| Knowledge Enhanced Event Causality Identification with Mention Marking Generalizations | Li et al. | 2020/07/09 | |
| Learning to Rank for Plausible Reusability | Li et al. | 2019-07 | Association for Co... |
| Locality Constrained Decoding for Sequence Generation Using Grid Beam Search | Hokamp and Liu | 2017-07 | Association for Co... |
| Multimodal Joint Attribute Prediction and Value Extraction for E-commerce Product | Zhu et al. | 2020-11 | Association for Co... |
| Recollection versus Imagination: Exploring Human Memory and Cognition via Neural Language Mod... | Sap et al. | 2020-07 | Association for Co... |
| Story Ending Prediction by Transferable BERT | Li et al. | 8/2019 | International Joint ... |

COMET: Commonsense Transformers for Automatic Knowledge Graph Construction

Abstract: We present the first comprehensive study on automatic knowledge base construction for two prevalent commonsense knowledge graphs, ATOMIC (Sap et al., 2019) and ConceptNet (Speer et al., 2017). Contrary to many conventional KBs that store knowledge with canonical templates, commonsense KBs only store loosely structured open-text descriptions of knowledge. We posit that an important step toward automatic commonsense completion is the development of generative models of commonsense knowledge, and propose Commonsense Transformers (COMET) that learn to generate rich and diverse commonsense descriptions in natural language. Despite the challenges of commonsense modeling, our investigation reveals promising results when implicit knowledge from deep pre-trained language models is transferred to generate explicit

Figure 15: 绿色标记已读文献

组内阅读列表维护



| File Name | Description | Size | Updated |
|-------------------------|---|-----------|-------------|
| Event-Application.md | Update relevant papers in ACL 2021 | 1.17 KB | 16 days ago |
| Event-Construction.md | Update COMET paper | 5.84 KB | 2 days ago |
| Event-Representation.md | Update relevant papers in ACL 2021 | 381 Bytes | 16 days ago |
| README.md | Reconstructed the structure of the eventic graph reading list | 452 Bytes | 3 days ago |

This directory contains the reading list for Eventic Graph for NUSTM Group.

This Reading list is organized by the technical architecture of the Eventic Graph, including construction, representation, application, etc.

- Update relevant paper for ACL 2021.
- Add online addresses when papers are officially released.
- Update papers from other top conferences in recent three years.

Figure 16: 事理图谱相关的论文列表

目前主要分为三个部分：图谱的构建、表示和应用。构建部分涉及到的细分类别有事件抽取、事件检测、事件关系识别（因果）、图谱构建（ATOMIC）、图谱补全（COMET）等论文；表示部分包括事理图谱的节点和边的嵌入表示学习的论文；应用部分包括将事理图谱实际应用某个任务上的论文。

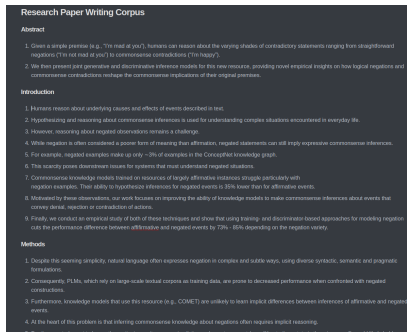


Figure 17: 写作素材积累

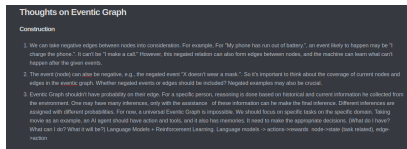


Figure 18: 阅读文献过程中的一些想法记录

Contents

① 工作总结

② 工作内容细节展示

③ 科研积累

④ 下季度计划

结论

- SMS 生态系统在智能手机时代出现了新的发展，加入了更多新的设备和参与者。
- 公共网关为用户提供了基于 SMS 的各种安全解决方案。
- 根据该研究，将 SMS 作为安全信道传递敏感信息存在一定的危险性。一些一次性的消息传递机制亟待改进 [1]。
- 至于短信滥用，公共网关可以用于规避一些安全性较差的认证机制，或进行 PVA 欺诈行为 [1]。

[1] Xiangqing Shen. Hello

总结

代表工作的总结

- 李忠阳的工作特点：聚焦于某一特定领域（交通、金融），以高度抽象化的谓词短语作为事件节点。根据特定领域的事件关联的特点，只关注于某一具体事件关系（如交通领域只关注时序关系，金融领域只关注因果关系），采用设计模版的方法在大规模语料上抽取相应的关系，经过抽象化后形成事理图谱。然后将构建好的事理图谱投入到相关领域的应用中。（具体->抽象->具体）
- AllenAI 的工作特点：不聚焦于特定领域，构建是通过众包。利用语言模型的强大能力，使用有监督的语料训练语言模型，使其可以在预先设计好的事件关系上推理接下来可能发生的事件。在他们的工作中，事件之间的关系不再局限于一种，有多种复杂的关系。

问题和优势

李忠阳

- **优势：**优势是确实具有**实际的应用效果**。由于李忠阳的工作聚焦于某一特定领域的特定关系，所以构建的复杂性大大降低。例如在金融领域，如果只考虑因果关系，经过高度抽象化以后，实际的事件节点数量确实能够一定程度上覆盖可能的金融事件。不仅图谱的构建复杂度降低，也有可能投入实际的应用。
- **问题：**由于是领域和关系限定的，**图谱的关系过于简单**。虽然满足了图谱的基本要求，但是关系十分单一，实际上在他所有的工作中图谱只存在一种关系。

问题和优势

AllenAI

- 优势：优势是确实是比较通用的事理图谱雏形。其中存在的事件关系比较复杂，可以描述现实世界中复杂的事件关系。
- 问题：节点的抽象程度不够。并且，在他们的工作中还有 Base Event 的概念。这里的 Base Event 实际上是数据集构建过程中设计好的模版事件，这些 Base Event 之间不会有边相连，这是不符合逻辑的。另外，由于 ATOMIC 这种知识图谱是通用型的，但是鉴于现实世界的复杂性，其实很难对所有可能的事件有一个满意的覆盖度。如一个 Base Event 后可能有上千个可能事件，但图谱只提供了不足 10 个。而且，这种图谱目前很难有实际的应用，因为现实世界中的事件演化和具体的人的状态，周围环境，历史积累等相关的。如对于一个盲人而言，拿电视遥控器的下一个动作就不太可能是打开电视机，目前这种知识图谱还无法做到根据盲人这一条件降低某些后续事件的

下季度计划

- 继续阅读近几年的事理图谱相关的论文。
- 针对目前阅读的文献思考如下问题：事理图谱的表示应该是什么样的（如节点的内容抽象化到什么程度；节点是否只能是表示事件的动宾短语；边上的信息是否只能是简单的事件关系；鉴于现实世界的复杂性，可能事理图谱目前模仿知识图谱的表达方式是不科学的，事理图谱的构建是客观的，应用是主观的，在特定条件下，可能某些图谱里的事件就不会发生了，这在传统知识图谱中是不可能出现的，事理图谱或许本身就应该是一个条件语言模型；），需要构建通用的还是领域的事理图谱。下游任务和事理图谱的结合需要进一步探索：目前有两种方向，一种是一定程度简化场景，构建领域特定的知识图谱（类似李忠阳）；一种是思考下游任务和图谱融合的模式，类似 BERT 在下游任务上的微调，具体到一个任务上，这种通用的图谱是否要进行一些结构上的变化，然后在这一任务的语料上进行进一步的补全等操作。
- 回答这些问题需要更多的文献阅读和思考。暂时没有更细致详细的计划思路，可能需要和老师讨论。

Thanks for Listening.



NUSTM

<http://www.nustm.cn/member/rxia/index-cn.html>

<https://github.com/NUSTM>

参考文献 I

- [1] Lizi Liao, Xiangnan He, Bo Zhao, Chong-Wah Ngo, and Tat-Seng Chua. 2018. Interpretable multimodal retrieval for fashion products. In *2018 ACM Multimedia Conference on Multimedia Conference, MM 2018, Seoul, Republic of Korea, October 22-26, 2018*, pages 1571–1579.