Hao Fei　费豪

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⌂ https://scofield7419.github.io/

⌂ https://github.com/scofield7419

● https://dblp.uni-trier.de/pid/81/3569-1.html

🎓 https://scholar.google.com/citations?user=YGDX46AAAAAJ

He is now a research fellow in NExT++ lab, School of Computing, National University of Singapore, supervised by Prof. Tat-Seng Chua. Before this, he obtained his Ph.D degree at Wuhan University.

Research Interests

His research direction is deep learning driven natural language processing (NLP) and text mining. He has published multiple research papers in related venues such as ACL, AAAI, IJCAI, WWW, EMNLP, COLING, TNNLS, TASLP etc. His research interest lies in the theme of **structure-aware NLP**, i.e., *integrating syntax/semantic structure into downstream NLP tasks*, covering varying applications such as:

- Information Extraction,
- Knowledge-driven Langauge Models,
- Multimodality,
- Affective Computing,
- Structure Parsing, etc.

Publications

▶*Information Extraction*

[1] Jingye Li*, **Hao Fei***, Jiang Liu, Shengqiong Wu, Meishan Zhang, Chong Teng, Donghong Ji, Fei Li. Unified Named Entity Recognition as Word-Word Relation Classification. Proceedings of **AAAI**. 2022. (* Equal contribution)

[2] **Hao Fei**, Fei Li, Bobo Li, Yijiang Liu, Yafeng Ren, Donghong Ji. Rethinking Boundaries: End-To-End Recognition of Discontinuous Mentions with Pointer Networks. Proceedings of **AAAI**. 2021.

[3] Jingye Li, Kang Xu, Fei Li, **Hao Fei**, Yafeng Ren and Donghong Ji. MRN: A Locally and Globally Mention-Based Reasoning Network for Document-Level Relation Extraction. Findings of **ACL**. 2022.

[4] **Hao Fei**, Yafeng Ren, Donghong Ji. Recognizing Nested Named Entity in Biomedical Texts: A Neural Network Model with Multi-task Learning. Proceedings of **BIBM**. 2019.

[5] **Hao Fei**, Yue Zhang, Yafeng Ren, Donghong Ji. Optimizing Attention for Sequence Modeling via Reinforcement Learning. IEEE **TNNLS**. 2021.

[6] **Hao Fei**, Yue Zhang, Yafeng Ren, Donghong Ji. A span-graph neural model for overlapping entity relation extraction in biomedical texts. Bioinformatics. 2021.

[7] **Hao Fei**, Yafeng Ren, Yue Zhang, Donghong Ji, Xiaohui Liang. Enriching Contextualized Language Model from Knowledge Graph for Biomedical Information Extraction. Briefngs in Bioinformatics. 2020.

[8] **Hao Fei**, Yafeng Ren, Donghong Ji. Boundaries and edges rethinking: an end-to-end neural model for

overlapping entity relation extraction. Information Processing & Management. 2020.

[9] **Hao Fei**, Yafeng Ren, Donghong Ji. A tree-based neural network model for biomedical event trigger detection. Information Sciences. 2019.

►*Affective Computing*

[1] **Hao Fei**, Jingye Li, Yafeng Ren, Meishan Zhang, Donghong Ji. Making Decision like Human: Joint Aspect Category Sentiment Analysis and Rating Prediction with Fine-to-Coarse Reasoning. Proceedings of **WWW**. 2022.

[2] **Hao Fei**, Yafeng Ren, Bobo Li, Shengqiong Wu, Donghong Ji. Latent Target-Opinion as Prior for Document-Level SentimentClassification: A Variational Approach from Fine-Grained Perspective. Proceedings of **WWW**. 2021.

[3] Shengqiong Wu, **Hao Fei**†, Fei Li, Donghong Ji, Meishan Zhang, Yijiang Liu, Chong Teng. Mastering the Explicit Opinion-role Interaction: Syntax-aided Neural Transition System for Unified Opinion Role Labeling. Proceedings of **AAAI**. 2022. († Corresponding author)

[4] Shengqiong Wu*, **Hao Fei***, Yafeng Ren, Donghong Ji, Jingye Li. Learn from Syntax: Improving Pair-wise Aspect and Opinion Terms Extraction with Rich Syntactic Knowledge. Proceedings of **IJCAI**. 2021. (∗ Equal contribution)

[5] **Hao Fei**, Yue Zhang, Yafeng Ren, Donghong Ji. Latent Emotion Memory for Multi-Label Emotion Classification. Proceedings of **AAAI**. 2020.

[6] Jingye Li*, **Hao Fei***, Donghong Ji. Modeling Local Contexts for Joint Dialogue Act Recognition and Sentiment Classification with Bi-channel Dynamic Convolutions. Proceedings of **COLING**. 2020. (∗ Equal contribution)

[7] **Hao Fei**, Donghong Ji, Yue Zhang, Yafeng Ren. Topic-Enhanced Capsule Network for Multi-Label Emotion Classification. IEEE **TASLP**. 2020.

[8] **Hao Fei**, Yafeng Ren, Donghong Ji. Implicit Objective Network for Emotion Detection. Hao Fei, Yafeng Ren, Donghong Ji. Proceedings of **NLPCC**, 2019.

[9] **Hao Fei**, Yafeng Ren, Yue Zhang and Donghong Ji. Non-Autoregressive Encoder-Decoder Neural Framework for End-to-End Aspect-Based Sentiment Triplet Extraction. IEEE **TNNLS**. 2021.

►*Semantics/Syntax Parsing*

[1] **Hao Fei**, Shengqiong Wu, Yafeng Ren, Fei Li and Donghong Ji. Better Combine Them Together! Integrating Syntactic Constituency and Dependency Representations for Semantic Role Labeling. Findings of **ACL**. 2021.

[2] **Hao Fei**, Meishan Zhang, Bobo Li, Donghong Ji. End-to-end Semantic Role Labeling with Neural Transition-based Model. Proceedings of **AAAI**. 2021.

[3] **Hao Fei**, Fei Li, Bobo Li, Donghong Ji. Encoder-Decoder Based Unified Semantic Role Labeling with Label-Aware Syntax. Proceedings of **AAAI**. 2021.

[4] **Hao Fei**, Shengqiong Wu, Yafeng Ren, Donghong Ji. Second-order Semantic Role Labeling with Global Structural Refinement. IEEE **TASLP**. 2021.

[5] **Hao Fei**, Meishan Zhang, Donghong Ji. Cross-Lingual Semantic Role Labeling with High-Quality Translated Training Corpus. Proceedings of **ACL**. 2020.

[6] **Hao Fei**, Meishan Zhang, Fei Li, Donghong Ji. Cross-lingual semantic role labeling with model transfer. IEEE **TASLP**. 2020.

[7] **Hao Fei**, Yafeng Ren, Donghong Ji. Retrofitting Structure-aware Transformer Language Model for End Tasks. Proceedings of **EMNLP**. 2020.

[8] **Hao Fei**, Yafeng Ren, Donghong Ji. Mimic and Conquer: Heterogeneous Tree Structure Distillation for Syntactic NLP. Findings of **EMNLP**. 2020.

[9] **Hao Fei**, Yafeng Ren, Donghong Ji. Improving Text Understanding via Deep Syntax-Semantics Communication. Findings of **EMNLP**. 2020.

[10] **Hao Fei**, Yafeng Ren, Donghong Ji. High-order Refining for End-to-end Chinese Semantic Role Labeling. Proceedings of **AACL-IJCNLP**. 2020.

Education or Working Experience

2022.3–present   🔖 **National University of Singapore**, Singapore.
Research Fellow.
Supervisor: Prof. Tat-Seng Chua.

2018.9–2021.12   🔖 **Wuhan University**, Wuhan, China.
Ph.D. candidate in Computer Science.
Thesis: *On the Syntax-oriented Modeling and Optimization of Natural Language*.
Supervisor: Prof. Donghong Ji.
Co-Mentor: Dr. Meishan Zhang (Harbin Institute of Technology (Shenzhen), China).
Co-Mentor: Dr. Yue Zhang (Westlake University, China),
Co-Mentor: Dr. Yafeng Ren (Wuhan University, China).

2016.9–2018.6   🔖 **Wuhan University**, Wuhan, China.
M.S. in Computer Science.
Supervisor: Prof. Donghong Ji.

2014.7–2014.9   🔖 **Baidu Inc.**, Shenzhen, China.
Intern.

2012.9–2016.6   🔖 **XiDian University**, Xi'an, China.
B.S. in Physics.

Honor and Award

2022   🔖 Excellent graduate student of Wuhan University

2021   🔖 Outstanding graduate student award of Wuhan University.

   🔖 2st prize of academic innovation scholarship of Wuhan University.

   🔖 Yugang-Songxiao scholarship of Wuhan University.

   🔖 Nomination award of Influential figure award of Wuhan University.

   🔖 1st prize of Extraordinary scholarship of academy.

Honor and Award (continued)

1st prize of Excellent scholarship of academy for Ph.D. Fellowship.

2020   1st prize of Luoge scholarship for Ph.D. Fellowship.

National scholarship for graduate students.

Pacesetter of outstanding graduate student award of Wuhan University.

Nomination award of academic stars of Wuhan University.

1st prize of academic scholarship of Wuhan University.

2019   1st prize of Jing-Dong Dialogue Challenge (JDDC).

2018   1st prize of Text matching CHIP Challenge.

2016-19   2st prize of academic scholarship of Wuhan University.

2017   2nd prize of National Mathematical Modeling Competition for Postgraduates.

Professional Service

Conference PC   ARR, ACL, ICML, ICLR, NeurIPS, AAAI, EMNLP, COLING, CCL, NLPCC, etc.

Journal Reviewer   IEEE TNNLS, IEEE TASLP, IEEE TAFFC, ACM TALLIP, Information Processing & Management, Neurocomputing, Information Sciences, Knowledge-based System etc.

Community   ACL member, AAAI member, ACM member, China Computer Federation (CCF) member, Chinese Information Processing Society of China (CHIP) member, Youth Working Committee in CHIP.

Teaching Assistant   *C programming and algorithm* (Autumn 2019), *Natural language understanding* (Autumn 2020), *Deep learning* (Spring 2021) in Wuhan University.

Skills

Languages   English (Freely expressing), Mandarin Chinese, Cantonese.

Coding   Python, Java, C/C++, JS, PHP, HTML/CSS, STM32, Shell, LaTeX, Markdown …

Deep-Learning   Pytorch, TensorFlow, Keras, Theano, Dynet, Tensor2tensor, Mxnet, OpenAI, FastAI, AllenNLP, Paddle paddle, Chainer …

Open Sources

633 ★ | A highly modular framework for sequential labeling tasks.

250 ★ | A summarization of MUST-READ deep learning papers for beginners.

72 ★ | A Hierarchical BiLSTM-CNN for sentiment analysis.

61 ★ | ⊙ 🔖 Hands-on tutorials on various popular Deep Learning frameworks.

Patent

2021 🔖 A Recursive Conditional Random Field Method for Event Recognition. Donghong Ji, **Hao Fei**, Shengqiong Wu. (Chinese Patent, CN202110101327)

  🔖 A Deep Joint Neural Model for Element Extraction. Donghong Ji, Kang Xu, **Hao Fei**. (Chinese Patent, CN202110101370)

2019 🔖 A Reinforcement Learning Based Scheduling Algorithm for Public Opinion Devices. **Hao Fei**, Kaizhi Wu. (Chinese Patent, CN201910204236.X)