Wenjuan Han

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Education

2020-Current	Research Fellow, **National University of Singapore (NUS)**
2019-2020	Visiting Researcher, **University of California, Los Angeles (UCLA)**
2014-2020	PhD, Shanghai Institute of Microsystem And Information Technology, Chinese Academy of Sciences, Joint program with ShanghaiTech University and **University of Chinese Academy of Sciences** Advisor: Prof. Kewei Tu
2010-2014	BS in Optical Information Science and Technology, **Nanjing University of Posts and Telecommunications**

Publications

ACL 2020 — Towards Holistic and Automatic Evaluation of Open-Domain Dialogue Generation
Bo Pang, Erik Nijkamp, **Wenjuan Han**, *Linqi Zhou, Yixian Liu and Kewei Tu*
Propose holistic evaluation metrics that capture different aspects of open-domain dialogues. Our metrics consist of (1) GPT-2 based context coherence between sentences in a dialogue, (2) GPT-2 based fluency in phrasing, (3) n-gram based diversity in responses to augmented queries, and, (4) logical self-consistency.

EMNLP 2020 — Adversarial Attack against Dependency Parsing (submitted)
Wenjuan Han, *Liwen Zhang, Jiang Yong and Kewei Tu*

COLING 2020 — A Survey of Unsupervised Dependency Parsing (submitted)
Wenjuan Han, *Jiang Yong and Kewei Tu*

ACL 2019 — Enhancing Unsupervised Generative Dependency Parser with Contextual Information
Wenjuan Han, *Yong Jiang, Kewei Tu*
Propose an autoencoder framework that combines generative and discriminative approaches in order to tackle the limitation of unrealistic conditional independence assumption often assumed in unsupervised dependency parsing.

EMNLP-IJCNLP 2019 — Multilingual Grammar Induction with Continuous Language Identification
Wenjuan Han, *Ge Wang, Yong Jiang, Kewei Tu*
Propose a novel universal grammar induction approach that represents language identities with continuous vectors. Without any prior linguistic phylogenetic knowledge, we automatically capture similarity between languages with the vector representations and softly tie the grammar parameters of different languages.

Publications

EMNLP-IJCNLP 2019 | A Regularization-based Framework for Bilingual Grammar Induction
Yong Jiang, **Wenjuan Han**, *Kewei Tu*
Propose a framework in which the learning process of the grammar model of one language is influenced by knowledge from the model of another language.

NeuroComputing 2019 | Lexicalized Neural Unsupervised Dependency Parsing
Wenjuan Han, *Yong Jiang, Kewei Tu*
Combine the dependency parsing with the rich nonlinear featurization of neural network approaches and lexicalized features.

IEEE Access 2019 | Latent Variable Autoencoder
Wenjuan Han, *Ge Wang, and Kewei Tu*
Apply the proposed model at ACL2019 for two application (the perceptual grouping task and the POS induction task) to verify the flexibility of the autoencoder framework. The flexibility of our framework allows us to apply it to various scenarios where the explicit inference of hidden variables is desired.

EMNLP 2017 | Dependency Grammar Induction with Neural Lexicalization and Big Training Data
Wenjuan Han, *Yong Jiang, Kewei Tu*
Conduct a systematic study regarding the impact of the degree of lexicalization and the training data size on the accuracy of grammar induction approaches.

EMNLP 2017 | Combining Generative and Discriminative Approaches to Unsupervised Dependency Parsing via Dual Decomposition
Yong Jiang, **Wenjuan Han**, *Kewei Tu*
Propose a new learning strategy that can learn a generative model and a discriminative model jointly based on the dual decomposition method.

EMNLP 2016 | Unsupervised Neural Dependency Parsing
Yong Jiang, **Wenjuan Han**, *Kewei Tu*
Propose the first neural probabilistic model to unsupervised dependency parsing.

PATENT 2017 | Optical fiber energy transmission system interlocking protection device
Xiabao Wu, Yanhua Zhang, Qi Wang **Wenjuan Han**, *Chen Qian et al.*
Publication number: CN104009451A.

Research Interests

My research interest is in natural language processing and machine learning. My current research focuses on the study of probabilistic/neural models and follows two researching paths: (1) grammar-based representation, inference, and unsupervised learning; and (2) the application of unsupervised learning approaches with hidden variables in a variety of artificial intelligence areas including grammar induction, POS induction and perceptual grouping.

Experience

Reviewer: **ACL 2019** | **INLG 2019** | WWW(TheWebConf 2021)
Standing Reviewer: **Computational Linguistics**
TA: CS281 Course | Artificial Intelligence | Web Technology