

YINPEI DAI

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EDUCATION

Tsinghua University M.S. in Information and Communication Engineering. Advised by Prof. Zhijian Ou.	Beijing, China 2016.09 - 2019.07
Tsinghua University B.S. in Mathematics and Physics. GPA: 91/100.	Beijing, China 2012.08 - 2016.07

PUBLICATIONS

In chronological order; (*) denotes equal contribution

- [1]. Wanwei He*, **Yinpei Dai***, Yinhe Zheng, Yuchuan Wu, Zheng Cao, et al, “*GALAXY: A Generative Pre-trained Model for Task-Oriented Dialog with Semi-Supervised Learning and Explicit Policy Injection*”, AAAI 2022.
- [2]. **Yinpei Dai**, Hangyu Li, Yongbin Li, Jian Sun, Fei Huang, Luo Si, and Xiaodan Zhu, “*Preview, Attend and Review: Schema-Aware Curriculum Learning for Multi-Domain Dialog State Tracking*”, in ACL-IJCNLP, 2021
- [3]. Bo-Hsiang Tseng, **Yinpei Dai**, Florian Kreyssig, and Bill Byrne. “*Transferable Dialogue Systems and User Simulators*”, in ACL-IJCNLP, 2021
- [4]. Yajing Sun, Yong Shan, Chengguang Tang, Yue Hu, **Yinpei Dai**, Jing Yu, Jian Sun, Fei Huang, and Luo Si, “*Unsupervised Learning of Deterministic Dialogue Structure with Edge-Enhanced Graph Auto-Encoder*”, in AAAI, 2021
- [5]. Haitao Mi, Qiyu Ren, **Yinpei Dai**, Yifan He, Jian Sun, Yongbin Li, Jing Zheng, and Peng Xu. “*Towards Generalized Models for Beyond Domain API Task-oriented Dialogue*”, in DSTC Workshop, AAAI, 2021
- [6]. **Yinpei Dai***, Yichi Zhang*, Hong Liu, Zhijian Ou, Yi Huang, and Junlan Feng, “*Elastic CRFs for Open-Ontology Slot Filling*”, in Applied Sciences, 2021
- [7]. **Yinpei Dai**, Hangyu Li, Chengguang Tang, Yongbin Li, Jian Sun, and Xiaodan Zhu, “*Learning Low-Resource End-To-End Goal-Oriented Dialog for Fast and Reliable System Deployment*”, in ACL, 2020
- [8]. Yichi Zhang, **Yinpei Dai**, Zhijian Ou, Huixin Wang, Junlan Feng, “*Improved Learning of Word Embeddings with Word Definitions and Semantic Injection*”, in INTERSPEECH, 2020
- [9]. Lina Rojas-Barahona, Bo-Hsiang Tseng, **Yinpei Dai**, Clare Mansfield, Osman Ramadan, Stefan Ultes, Michael Crawford, and Milica Gasic, “*Deep Learning for Language Understanding of Mental Health Concepts Derived From Cognitive Behavioural Therapy*”, in LOUHI Workshop, EMNLP, 2018
- [10]. **Yinpei Dai**, Zhijian Ou, Dawei Ren, and Pengfei Yu, “*Tracking of Enriched Dialog States for Flexible Conversational Information Access*”, in ICASSP, 2018

EXPERIENCE

Alibaba DAMO Academy Senior Algorithm Engineer Focusing on R&D in conversational AI and advancing the state-of-the-art in task-oriented dialog systems	Beijing, China 2019.07 - till date
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- Proposed Meta-Dialog System to learn low-resource end-to-end dialog. Combined the MAML approach and human-machine collaboration for fast and reliable system deployment (paper published at ACL 2020). Developed products accordingly and improved online success rate by 5%+ for all applied businesses.
- Proposed a model-agnostic Dialog State Tracking framework to exploit both schema and curriculum structure information. Achieved SOTA results on MultiWOZ understanding task. (published at ACL-IJCNLP 2021).
- Proposed a joint optimization framework for user simulators and dialog systems. Demonstrated the effectiveness of self-play dialog augmentation in domain adaptation (paper published at ACL-IJCNLP 2021).
- Leveraged consistency regularization to inject useful dialog annotations into models via semi-supervised pre-training. Achieved SOTA results on MultiWOZ policy and generation tasks. (accepted by AAAI 2022). Developing the largest pre-trained dialog model and the largest Chinese benchmark in task-oriented dialog.

Speech Processing and Machine Intelligence Lab, Tsinghua University

Research Assistant

Supervisor: Prof. Zhijian Ou

Beijing, China

2016.09 - 2019.07

- Generalized traditional representations of dialog states to contain sentiments and multi-values for each slot. Designed new tracking models for more flexible information access (paper published at ICASSP 2018).
- Studied zero-shot natural language understanding in open-ontology slot filling. Used natural descriptions of unseen slots to create dynamic potential functions for CRFs (paper published at Applied Sciences 2021).

Dialogue Systems Group, University of Cambridge

Research Intern

Supervisor: Prof. Milica Gašić (Now at Heinrich Heine University Düsseldorf)

Cambridge, UK

2018.06 - 2018.09

- Investigated the performance of different types of distributed representations and deep neural networks on a large-scale mental health dialog dataset (paper published in LOUHI 2018).
- Built a psychotherapy-oriented chatbot for mental health.

HONORS AND AWARDS

- First place in track1 objective evaluation, the Ninth Dialog System Technology Challenge (DSTC9) 2020.10
- First prize of National Scholarship, Tsinghua University 2014.12
- Samsung Scholarship, Tsinghua University 2013.12

PROFESSIONAL SERVICE

- Reviewer - IEEE Access
- Reviewer - AAAI 2021
- Reviewer - EMNLP 2021
- Reviewer - AAAI 2022
- Reviewer - ACL Rolling Review (November)

INVITED TALK

- *Learning Low-Resource End-to-End Goal-Oriented Dialog* 2020.08.21
- Presented at Dialog Systems and Machine Learning Group, Heinrich Heine University Düsseldorf
- *Advanced Markov Chain Monte Carlo Algorithms* 2014.10.08
- Presented at Integrated Vision and Intelligent Perception Group, Tsinghua University

TEACHING

- TA, Theory and Applications of Probabilistic Graphical Models (80230652), THU, Spring 2018
- TA, Computer Program Design I (30230672), THU, Fall 2017
- TA, Probability and Stochastic Processes I (30230742), THU, Spring 2017
- TA, Probability and Stochastic Processes II (30230783), THU, Fall 2016

SKILLS

Programming	Python, Shell, C/C++, MySQL, Matlab, HTML/CSS
Libraries	Tensorflow, Pytorch, Transformers, Spacy, NLTK, Scikit-learn
Web Framework	Django, Flask
Tools	L ^A T _E X, Git, Docker
English Test	Toefl 103, GRE V159 Q170 AW3.5