

Yinpei Dai

Curriculum Vitae

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📄 <https://yinpeidai.github.io>

Education

Sep. 2016 - Present

Tsinghua University, Beijing, China.

- M.Sc. in Electronic Engineering
- Advisor: Prof. [Zhijian Ou](#).
- Research interests: spoken dialogue systems, natural language processing, machine learning.

Aug. 2012 - Jul. 2016

Tsinghua University, Beijing, China.

- M.Eng. in Mathematics and Physics.
- Major GPA: 91/100; Overall GPA: 91/100.
- Recipient of the first-class scholarship.
- Bachelor Thesis: Inference and Learning Algorithms for State-space Models.

Research Experience

Sep. 2016 - Present

Speech Processing and Machine Intelligence Lab, *Tsinghua University*, Beijing, China.

- Generalized the traditional representations of dialog states. Designed new dialog state tracking models for flexible information access. (paper accepted in ICASSP 2018)
- Studied zero-shot natural language understanding. Proposed new CRFs for open-ontology slot filling. (paper submitted to ICASSP 2019)
- Building reliable customer service dialogue system for China Mobile Communications Group Cooperation, Ltd. (project code: MCM20170301)

Jun. 2018 - Sep. 2018

Dialogue Systems Group, *University of Cambridge*, Cambridge, U.K..

- Investigated the performance of different distributed representations and deep neural networks on a big mental health dataset. (paper accepted in EMNLP 2018)
- Proposed a new VAE model for controllable response generation. Achieved better performance than attention-based Seq2Seq and CopyNet.

Sep. 2014 - Jul. 2016

Speech Processing and Machine Intelligence Lab, *Tsinghua University*, Beijing, China.

- Studied sampling methods on inference and learning problems in state-space models.
- Proposed a new MCMC algorithm based on stochastic approximation and mixture sampling.

Publications

- [1] Lina Maria 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 *EMNLP 2018 Workshop on Health Text Mining and Information Analysis*, pages 44–54.

- [2] **Yinpei Dai**, Zhijian Ou, Dawei Ren, and Pengfei Yu. Tracking of enriched dialog states for flexible conversational information access. In *2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pages 6139–6143.
- [3] **Yinpei Dai**, Yichi Zhang, Zhijian Ou, Yanmeng Wang, and Junlan Feng. Elastic crfs for open-ontology slot filling. In *2019 IEEE International Conference on Acoustics, Speech and Signal Processing, (ICASSP)*. **Currently Under Review**.

Teaching Experience

Sep. 2016 - Jan. 2017

Teaching assistant, *Probability and Stochastic Processes (2)*, Fall 2016.

Feb. 2017 - May. 2017

Teaching assistant, *Probability and Stochastic Processes (1)*, Spring 2017.

Sep. 2017 - Jan. 2018

Teaching assistant, *Fundamentals of computer programming*, Fall 2017.

Feb. 2018 - May. 2018

Teaching assistant, *Theory and Applications of Probabilistic Graphical Models*, Spring 2018.

Invited Talks

Oct. 2014

IVIP Group, Tsinghua University, Beijing.

Gave a talk on Markov Chain Monte Carlo algorithm and its advanced variants

Honors and Memberships

Apr. 2018 - Present

IEEE student membership.

Apr. 2018 - Present

IEEE Signal Processing Society (SPS) student membership.

Oct. 2014

Haodushu Scholarship, Tsinghua University, First-class national scholarship.

Oct. 2013

Samsung Scholarship, Tsinghua University.

Skills

Programming language Python, C/C++, Java, Matlab, Shell, MySQL, HTML, \LaTeX , etc.

Python Tools Tensorflow, Pytorch, Django, Scrapy