Ziming Li, Ph.D.

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My research interest is developing advanced dialogue systems, including both open-domain and task-oriented dialogue systems. I'm also interested in the fields of information retrieval and optimizing interactive systems by learning from users.

Education and Experience

07/2021 – present
Applied Scientist, Amazon Alexa AI, Seattle, USA
Responsibility:

- Conducting research on state-of-the-art deep learning techniques and developing algorithms for dialogue systems;
- Designing and building scalable machine learning models that can handle large amounts of Alexa traffic.

03/2021 – 05/2021
Post-doc, University of Amsterdam, Netherlands
Supervisor: Prof. Dr. Evangelos Kanoulas
Research Topic: Dialogue systems and Learning through interaction

09/2016– 02/2021
PhD Candidate, University of Amsterdam, Netherlands
Supervisor: Prof. Dr. Maarten de Rijke
Co-Supervisor: Dr. Julia Kiseleva
Research Topic: Information Retrieval, Dialogue systems and Inverse Reinforcement Learning

09/2013 – 07/2016
M.Sc. Computer Science, Xiamen University, China
Supervisor: Dr. Xiangrong Liu
Research Topic: Membrane Computing, Bioinformatics
Thesis Title: Research on Some Mathematical Problems Based on Time-free P Systems (9.2/10, Outstanding Master Thesis Title)

09/2009 – 07/2013
B.Sc. Computer Science, Xiamen University, China
Thesis Title: Parameterization of Triangular Meshes (graded 8.9/10, Outstanding Bachelor Thesis Title)

Internships

05/2019 - 08/2019
Deep Learning Group, Microsoft Research, Redmond
we proposed a guided dialogue policy training method without using adversarial training in the loop.

05/2020 - 08/2020
Amazon Alexa, Seattle
we proposed a context-sensitive method to estimate the turn-level satisfaction for dialogue considering various types of user preferences.

Research Publications

1. Kiseleva, J., **Li**, **Z.**, Aliannejadi, M., Mohanty, S., ter Hoeve, M., Burtsev, M., … Srinet, K. et al. (2022). Interactive grounded language understanding in a collaborative environment: Iglu 2021. In *Neurips 2021 competitions and demonstrations track* (pp. 146–161). PMLR.
2. Kiseleva, J., Skrynnik, A., Zholus, A., Mohanty, S., Arabzadeh, N., Côté, M.-A., … Burtsev, M. et al. (2022). Iglu 2022: Interactive grounded language understanding in a collaborative environment at NeurIPS 2022. *arXiv preprint arXiv:2205.13771*.
3. **Li**, **Z.**, Kiseleva, J. & de Rijke, M. (2021). Improving response quality with backward reasoning in open-domain dialogue systems. *SIGIR 2021*.
4. **Li**, **Z.**, Park, D., Kiseleva, J., Kim, Y.-B. & Lee, S. (2021). A data-driven approach to estimate user satisfaction in multi-turn dialogues. *arXiv preprint arXiv:2103.01287*.
5. **Li**, **Z.**, Kiseleva, J., Agarwal, A., de Rijke, M. & White, R. W. (2020). Optimizing interactive systems via data-driven objectives. *arXiv preprint arXiv:2006.12999*.
6. **Li**, **Z.**, Kiseleva, J. & de Rijke, M. (2020). Rethinking supervised learning and reinforcement learning in task-oriented dialogue systems. *Findings of EMNLP 2020*.
7. **Li**, **Z.**, Lee, S., Peng, B., Li, J., Kiseleva, J., de Rijke, M., … Gao, J. (2020). Guided dialogue policy learning without adversarial learning in the loop. *Findings of EMNLP 2020*.
8. **Li**, **Z.**, Kiseleva, J., Agarwal, A. & de Rijke, M. (2019). Learning data-driven objectives to optimize interactive systems. *LIRE workshop, NeurIPS 2019*.
9. **Li**, **Z.**, Kiseleva, J. & de Rijke, M. (2019). Dialogue generation: From imitation learning to inverse reinforcement learning. *AAAI 2019*.
10. **Li**, **Z.** & de Rijke, M. (2017). The impact of linkage methods in hierarchical clustering for active learning to rank. *SIGIR 2017*, 941–944.
11. **Li**, **Z.**, Kiseleva, J., de Rijke, M. & Grotov, A. (2017). Towards learning reward functions from user interactions. *ICTIR 2017*, 289–292.
12. Liu, X., **Li**, **Z.**, Liu, J., Liu, L. & Zeng, X. (2015). Implementation of arithmetic operations with time-free spiking neural p systems. *IEEE transactions on nanobioscience*, *14*(6), 617–624.
13. Liu, X., **Li**, **Z.**, Suo, J., Liu, J. & Min, X. (2015). A uniform solution to integer factorization using time-free spiking neural p system. *Neural Computing and Applications*, *26*(5), 1241–1247.
14. Liu, X., Suo, J., **Li**, **Z.**, Zou, Q., Liu, J. & Ju, Y. (2015). Reusable logic gates based on dna strand branch migration. *Journal of Computational and Theoretical Nanoscience*, *12*(8), 1624–1629.
15. Liu, X., **Li**, **Z.**, Suo, J., Ju, Y., Liu, J. & Zeng, X. (2014). Solving multidimensional 0-1 knapsack problem with time-free tissue p systems. *Journal of Applied Mathematics*.

Academic Activities

- Reviewer for CIKM'22, CIKM'21, AAAI'24, AAAI'23, AAAI'22, AAAI'21, AAAI'20, TOIS, T-ASL, IPM and Information Retrieval Journal
  Sub-reviewer for ECIR'18, SIGIR'18, CIKM'18, NAACL'19 and SIGIR'19
- Organizer for Neurips 2021 competition "IGLU: Interactive grounded language understanding in a collaborative environment"
- Organizer for Neurips 2022 competition "IGLU: Interactive grounded language understanding in a collaborative environment"
- European Summer School in Information Retrieval 2017, Barcelona, Spain

Skills

Tools & Technologies	Numpy, PyTorch, Tensorflow, PySpark
Coding	Python, C, LaTeX

Awards and Achievements

2014 National Scholarship for outstanding Postgraduate students, China

2015 National Scholarship for outstanding Postgraduate students, China

Teaching Experience

TAing Information Retrieval 1 (2018), University of Amsterdam, Netherlands

Supervision Two Master theses (2018), University of Amsterdam, Netherlands

- Title: *Cyclists' Route Choice in Amsterdam: Finding Factors of Influence and Predicting Cyclists' Route ChoicE*, with Chris Olberts
- Title: *How to measure a neighborhood: Exploring geo-spatial data enrichment and neighborhood embeddings for housing price prediction*, with Guus Bobeldijk

Two Master theses (2019), University of Amsterdam, Netherlands

- Title: *Text Classification for Ground Lease Documents*, with Rouel de Romas
- Title: *Predicting salary using Job posting data*, with Roma Bakhyshov

Languages

Native	Chinese
Professional working proficiency	English