Guanghui Qin

Curriculum Vitae *Updated May 16, 2024*

Contact

Department of Computer Science
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Education

Johns Hopkins University Maryland, USA
M.S.E. in Computer Science Aug 2019 – May 2023
Ph.D. in Computer Science Aug 2019 – Present
Mentor: Prof. Benjamin Van Durme

Peking University Beijing, P. R. China
B.S. in Physics (first major) Sept 2015 – Jun 2019
B.S. in Computer Science (second major) Sept 2015 – Jun 2019
CS GPA: 3.72, Physics GPA: 3.52.

Professional Experience

Microsoft Research Lab (MSR) May 2023 – Aug 2023
Research Intern. Mentor: Corby Rosset
I researched efficient methods for long-context LLMs. I proposed a method to compress the context of LLaMA with a compression ratio of up to 20x with minimal performance tradeoffs. It worked on retrieval-augmented generation.

Microsoft Semantic Machines May 2022 – Aug 2022
Research Intern. Mentor: Anthony Platanios
I studied a new research problem for user action predictions. I built a 2TiB dataset from GitHub and implemented a model based on graph neural networks (GNNs) to predict user actions (e.g. issues).

Johns Hopkins University Jun 2018 – Nov 2018
Visiting Scholar. Mentor: Hongyuan Mei and Jason Einser.
I worked on temporal event stream modeling. We proposed a particle smoothing solution to sample events from a neural Hawkes process, which may interact with a deductive temporal database such as Datalog.

Microsoft Research-Asia (MSRA) Nov 2017 – Jun 2018
Research Intern. Mentor: Jin-Ge Yao and Chin-Yew Lin.
I proposed a Semi-HMMs-based statistics model for grounding natural language to structured data, which can be used to induce templates for data-to-text generation.

Honors

Best Short Paper Awardee in NAACL 2021
Outstanding Reviewer in EMNLP 2019

	Award for Scientific Research (Peking University)	2018
	May 4th Scholarship (Peking University)	2016 and 2018
	Merit Student (Peking University)	2017
	Award for Academic Diligence (Peking University)	2016
	Chinese Physics Olympiad (CPhO) Silver Medalist	2014

Professional Activities

Reviewer for NeurIPS (2019, 2020, 2021, 2022, and 2023)
Reviewer for ICLR (2019, 2020, 2021, 2023, and 2024)
Reviewer for ICML (2020 and 2021)
Reviewer for ACL (2021)
Reviewer for EMNLP (2019, 2020, 2021, and 2022)
Reviewer for NAACL (2024)
Reviewer for AAAI (2021)
Reviewer for AKBC (2020)

Skills

Programming languages: Python, Rust, JAVA, C/C++, Shell, LaTeX, and SQL.
Machine learning tools: PyTorch, Lightning AI, DeepSpeed, and FAISS.
Network/Web: I have been hosting a proxy service (WallessPKU) since 2017. I implemented the proxy protocols, front-/back-end, and the database.

Teaching Experience

TA for *Machine Learning* (CS 601.475) at Johns Hopkins University in 2022.

Preprints

2. Researchy Questions: A Dataset of Multi-Perspective, Decompositional Questions for LLM Web Agents. Corby Rosset, Ho-Lam Chung, **Guanghui Qin**, Ethan C Chau, Zhuo Feng, Ahmed Hassan Awadallah, Jennifer Neville, Nikhil Rao. In *arXiv*. 2024.

1. Streaming Sequence Transduction through Dynamic Compression. Wenting Tan, Yunmo Chen, Tongnfei Chen, **Guanghui Qin**, Haoran Xu, Heidi C Zhang, Benjamin Van Durme, Phillip Koehn. In *arXiv*. 2024.

Publications

13. Dodo: Dynamic Contextual Compression for Decoder-only LMs. **Guanghui Qin**, Corby Rosset, Ethan C Chau, Nikhil Rao, Benjamin Van Durme. In *Annual Meeting of the Association for Computational Linguistics (ACL)*. 2024.

12. Ras-mediated homeostatic control of front-back signaling dictates cell polarity. Yiyan Lin*, Dhiman S Pal*, Parijat Banerjee, Tatsat Banerjee, **Guanghui Qin**, Yu Deng, Jane Borleis, Pablo A Iglesias, and Peter Devreotes. In *Nature Cell Biology (accepted, issue number TBA)*. 2024.

11. Nugget: Neural Agglomerative Embeddings of Text. **Guanghui Qin** and Benjamin Van Durme. In *Proceedings of the Conference on International Conference on Machine Learning (ICML)*. 2023.

10. The NLP Task Effectiveness of Long-Range Transformers. **Guanghui Qin**, Yukun Feng, and Benjamin Van Durme. In *Proceedings of the European Chapter of the Association for Computational Linguistics (EACL, oral)*. 2023.

9. Learning How to Ask: Querying LMs with Mixtures of Soft Prompts. **Guanghui Qin** and Jason Eisner. In *Proceedings of Conference of the North American Chapter of the Association for Computational Linguistics (NAACL, short).* 2021. **Best Short Paper Award**

8. Everything Is All It Takes: A Multipronged Strategy for Zero-Shot Cross-Lingual Information Extraction. Mahsa Yarmohammadi, Shijie Wu, Marc Marone, Haoran Xu, Seth Ebner, **Guanghui Qin**, Yunmo Chen, J. Guo, Craig Harman, K. Murray, Aaron S. White, Mark Dredze, and Benjamin Van Durme. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP, oral).* 2021.

7. LOME: Large Ontology Multilingual Extraction. Patrick Xia*, **Guanghui Qin***, Siddharth Vashishtha, Yunmo Chen, Tongfei Chen, Chandler May, Craig Harman, Kyle Rawlins, Aaron Steven White, and Benjamin Van Durme. In *Proceedings of Conference of the European Chapter of the Association for Computational Linguistics (EACL, demo).* 2021.

6. Iterative Paraphrastic Augmentation with Discriminative Span-based Alignment. Ryan Culkin, J Edward Hu, Elias Stengel-Eskin, **Guanghui Qin**, and Benjamin Van Durme. In *Transactions of the Association for Computational Linguistics (TACL), 9:494-509.* 2021.

5. Neural Datalog Through Time: Informed Temporal Modeling via Logical Specification. Hongyuan Mei, **Guanghui Qin**, Minjie Xu, and Jason Eisner. In *Proceedings of the Conference on International Conference on Machine Learning (ICML, oral).* 2020.

4. CopyNext: Explicit Span Copying and Alignment in Sequence to Sequence Models. Singh Abhinav, Patrick Xia, **Guanghui Qin**, Mahsa Yarmohammadi, and Benjamin Van Durme. In *Proceedings of Workshop on Structured Prediction for NLP.* 2020.

3. Imputing Missing Events in Continuous-Time Event Streams. Hongyuan Mei, **Guanghui Qin**, and Jason Eisner. In *Proceedings of the Conference on International Conference on Machine Learning (ICML, oral).* 2019.

2. Learning Latent Semantic Annotations for Grounding Natural Language to Structured Data. **Guanghui Qin**, Jin-Ge Yao, Xuening Wang, Jinpeng Wang, and Chin-Yew Lin. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP, oral).* 2018.

1. Data2Text Studio: Automated Text Generation from Structured Data. Longxu Dou, **Guanghui Qin**, Jinpeng Wang, Jin-Ge Yao, and Chin-Yew Lin. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP, demo).* 2018.