Yuxuan Song

Tsinghua University – Beijing, China

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Education

Tsinghua University — **Beijing, China**
Sep. 2022-present

- Ph.D. in Computer Science and Technology
- Advised by Prof. Wei-Ying Ma.

Shanghai Jiao Tong University — **Shanghai, China**
Sep. 2013-Mar. 2020

- Bachelor and Master of Science in Computer Science and Technology
- Research Assistant, Apex Data and Knowledge Management Lab
- Advised by Prof. Yong Yu and Prof. Weinan Zhang.

Professional

Bytedance AI Lab, Researcher — May 2020 - Aug. 2021
Microsoft Research Asia, Research Intern — Sep. 2019 - Mar. 2020

Research Interests

My research is centered on machine learning, with an emphasis on Deep Generative Models and AI for Science. I'm devoted to developing innovative AI solutions for real-world problems with broad social impacts.

Publications (* for Equal Contribution)

- **Y. Song***, J. Gong*, M. Xu, Z. Cao, Y. Lan, S. Ermon, H. Zhou, W. Ma . Equivariant Flow Matching with Hybrid Probability Transport for 3D Molecule Generation. In the Proceedings of the Thirty-seventh Conference on Neural Information Processing Systems (**NeurIPS**), 2023.
- B. Qiang*, **Y. Song***, M. Xu, J. Gong, B. Gao, H. Zhou, W. Ma, Y. Lan. Coarse-to-Fine: a Hierarchical Diffusion Model for Molecule Generation in 3D. In the Proceedings of the Fortieth International Conference on Machine Learning (**ICML**), 2023.
- W. Shi*, **Y. Song***, H. Zhou, L. Li. Follow Your Path: a Progressive Method for Knowledge Distillation . In the Proceedings of European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML/PKDD**), 2021.
- **Y. Song**, L. Yu, Z. Cao, Z. Zhou, J. Shen, S. Shao, W. Zhang and Y. Yu. Improving Domain Adaptation with Variational Information Bottleneck. In Proceedings of 24th European Conference on Artificial Intelligence, (**ECAI**), 2020.
- **Y. Song**, N. Miao, H. Zhou, L. Yu and L. Li. Improving Maximum Likelihood Training for Text Generation with Density Ratio Estimation. In Proceedings of 23rd International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2020.
- **Y. Song**, M. Xu, L. Yu, H. Zhou, S. Shao and Y. Yu. Infomax Neural Joint Source-Channel Coding via Adversarial Bit Flip. In Proceedings of 34th AAAI Conference on Artificial Intelligence (**AAAI**), 2020.
- **Y. Song**, H. Cai, K. Ren, W. Zhang and Y. Yu. Volume Ranking and Sequential Selection in Programmatic Display Advertising. In Proceedings of the 26th ACM International Conference on Information and Knowledge Management (**CIKM**), 2017

- N. Miao, **Y. Song**, H. Zhou and L. Li. Do You Have the Right Scissors? Tailoring Pre-trained Language Models via Monte-Carlo Methods. In Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (**ACL**), 2020
- Z. Zhou, J. Liang, **Y. Song**, L. Yu, H. Wang, Z. Zhang, W. Zhang and Y. Yu. Lipschitz Generative Adversarial Nets. In Proceedings of 36th International Conference on Machine Learning (**ICML**), 2019
- G. Lu, Z. Zhou, **Y. Song**, K. Ren and Y. Yu.Guiding the One-to-one Mapping in CycleGAN via Optimal Transport. In Proceedings of the 33rd AAAI Conference on Artificial Intelligence (**AAAI**), 2019
- Z. Zhou, H. Cai, S. Rong, **Y. Song**, K. Ren, W. Zhang, Y. Yu and J. Wang. Activation Maximization Generative Adversarial Nets. In Proceedings of the 6th International Conference on Learning Representations (**ICLR**), 2018

Manuscripts

- Z. Zhou, **Y. Song**, J. Liang, L. Yu, H. Wang, Z. Zhang, W. Zhang and Y. Yu. Understanding the Effectiveness of Lipschitz Constraint in Training GANs via Gradient Analysis. Technical report. arXiv preprint arXiv:1807.00751, 2018.
- **Y. Song**, M. Xu, Q. Ye, T. Liu. Discriminator Contrastive Divergence: Semi-Amortized Generative Modeling by Exploring Energy of the Discriminator. Technical report. arXiv preprint arXiv:2004.01704, 2020.

Competitions

- Our team(AIRFold) win **first place** during 6 months in CAMEO contest of protein folding.

Academic Services

- **Conference Reviewer**: NeurIPS (2020-2023),ICML(2021-2023), ICLR(2023), AAAI(2020-2022).