

Kai Chen

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EDUCATION BACKGROUND

University of Virginia (Charlottesville, USA)

Aug. 2024 - Now

Ph.D. Student in Computer Science

Research Interest: Data Synthesis; Differential Privacy; Generative AI

University of Edinburgh (Edinburgh, UK)

Sep. 2020 - Aug. 2021

M.S. in Statistics with Data Science

Zhejiang University (Hangzhou, China)

Sep. 2016 - Jun. 2020

Chu Kochen Honors College

B.S. in Mathematics and Applied Mathematics & B.S. in Finance

PUBLICATION

- **Kai Chen**, Chen Gong, and Tianhao Wang. 2025. Beyond One-Size-Fits-All: Neural Networks for Differentially Private Tabular Data Synthesis. arXiv:2511.13893 [cs.LG] <https://arxiv.org/abs/2511.13893>
- **Kai Chen**, Xiaochen Li, Chen Gong, Ryan McKenna, and Tianhao Wang. 2025. Benchmarking Differentially Private Tabular Data Synthesis. arXiv:2504.14061 [cs.CR] <https://arxiv.org/abs/2504.14061> (*Accepted to SIGMOD 2026*)
- Xiaoye Miao, Huanhuan Peng, **Kai Chen**, Yuchen Peng, Yunjun Gao, and Jianwei Yin. 2022. Maximizing time-aware welfare for mixed items. In 2022 IEEE 38th International Conference on Data Engineering (ICDE). IEEE, 1044–1057.

RESEARCH PROJECT

Neural Network Solution to Differentially Private Tabular Data Synthesis

Feb. 2025 - July. 2025

Department of Computer Science, University of Virginia

- Analyze the strengths and weaknesses of statistical methods and NN theoretically and empirically
- Propose a new state-of-the-art NN-based solution to DP tabular data synthesis

Differentially Private Tabular Data Synthesis Benchmark

Aug. 2024 - Jan. 2025

Department of Computer Science, University of Virginia

- Propose a three-step framework for algorithm analysis
- The first to highlight the importance of data preprocessing in algorithm comparison
- Provide module-level comparisons on existing synthesis algorithms

Influence Maximization Project

Dec. 2019 - Aug. 2020

Center for Data Science, Zhejiang University

- Propose the mixed-type influence diffusion problems in the social network
- Provide a solution to this problem with a theoretical guarantee and empirical superiority

PROFESSIONAL EXPERIENCE

ByteDance (Shanghai, China)

Dec. 2021 - May. 2024

Position: *Data Analyst*

- Collect and process large-scale user data for subsequent analysis
- Conducted statistical analyses to identify key trends and inform business decisions

OTHER SKILLS

Programming Skills: Python; PyTorch; JAX; R; SQL; Matlab; C

Language Skills: Native speaker of Mandarin; proficient in English