

YIWEI CHEN

📍 COM1-01-08, National University of Singapore, Singapore
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EDUCATION

National University of Singapore

08/2024 – Present

Doctor of Philosophy

Singapore

- Pursuing a **Ph.D. in Computer Science** under the supervision of Prof. XIAO Xiaokui 🌐 [Homepage](#).

Tsinghua University

09/2020 – 06/2024

Double Bachelor's Degree in Science and Engineering

Beijing, China

- B.Sc. in **Mathematics and Physics** & B.Eng. in **Civil Engineering and Systems**.
- GPA: **3.85/4.00**.
- Academic Awards:
 - Tsinghua University Overall Excellence Scholarship (Top 20%, 2023);
 - Tsinghua University Academic Excellence Scholarship (Top 17%, 2023);
 - Tsinghua University Overall Excellence Scholarship (Top 20%, 2022);
 - Tsinghua University Academic Excellence Scholarship (Top 17%, 2022).

RESEARCH EXPERIENCE

Federated Learning Contribution Estimation [1]

09/2022 – Present

Database Laboratory, Tsinghua University

Beijing, China

- Supervised by Prof. LI Guoliang 🌐 [Homepage](#).
- Key Contributions:
 - An in-depth survey. Examined **29** distinct contribution estimation methods and dissected the problem into three key aspects: data utility metrics, contribution estimation schemes, and optimization techniques.
 - A comprehensive evaluation. Conducted an extensive evaluation of **13** state-of-the-art contribution estimation methods, comparing their effectiveness, robustness, and efficiency, which encompasses 4 datasets, 2 data distributions, and 4 adverse behaviors.
 - An extensive set of observations and findings. Identified the advantages and limitations of different data utility metrics, contribution estimation schemes and optimization techniques across various scenarios, as well as the summarized findings.
 - An extensible testing framework. Developed a flexible testing framework capable of accommodating multiple implemented methods, which serves as a potential benchmark for evaluating performance in this field.

PUBLICATIONS

- [1] **Yiwei Chen**, Kaiyu Li, Guoliang Li, and Yong Wang. 2024. Contributions Estimation in Federated Learning: A Comprehensive Experimental Evaluation. *Proc. VLDB Endow.* 17, 8 (2024), 2077–2090. <https://www.vldb.org/pvldb/vol17/p2077-li.pdf>

PROFESSIONAL SKILLS

- Language: English (Professional Working Proficiency; TOEFL: 103, Writing: 29; CET-6); Chinese (Native).
- GRE: 321 (Q: 170) + 3.5.
- Technical Skills: Python (PyTorch, Sklearn, Seaborn), C++ (C), MATLAB, SQL; \LaTeX , Drawio (a diagram maker); Git (Github), Overleaf.

WORK EXPERIENCE

Intern

01/2024 – 02/2024

Communication, Cooperation and Talent Working Division,

Beijing, China

Administrative Committee of Zhongguancun Science City

- Participated in the preparatory and on-site support work for the Zhongguancun Science City Artificial Intelligence Talent Innovation Development Forum, responsible for inviting “Haiying Talents” and corporate guests, compiling and updating the guest list, as well as on-site guest reception at the event.
- Participated in the on-site support work for the Zhongguancun Open Source Ecosystem Forum.
- Involved in the drafting, proofreading, collection, and distribution of relevant textual materials for the division.