Ming Yan

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Google Scholar: https://scholar.google.com/citations?user=Nye2GwkAAAAJ&hl=zh-CN

EDUCATION

- **College of Intelligence and Computing, Tianjin University**   Tianjin, China
  Ph.D. Candidate in Software Engineering   *September 2021 - Present*

  Advisor: *Prof. Junjie Chen*

- **College of Intelligence and Computing, Tianjin University**   Tianjin, China
  Master of Software Engineering   *September 2018 - July 2021*

  Senior Thesis: *Numerical Bugs Detection for Deep Learning Program via Gradient Search*

  Advisors: *Prof. Zan Wang, Prof. Junjie Chen*

- **College of Intelligence and Computing, Tianjin University**   Tianjin, China
  Bachelor of Software Engineering   *September 2014 - July 2018*

  Advisor: *Prof. Zan Wang*

RESEARCH INTERESTS

- Quality assurance of infrastructures in DL systems, such as DL libraries, and DL compilers. Besides, I am also interested in operating system testing and chip design testing.

INTERNSHIP

- **Huawei Noah's Ark Lab**   Beijing, China
  Research Intern   *April 2021 - May 2022*
- **China Automotive Technology & Research Center Co. Ltd**   Tianjin, China
  Research Intern   *January 2018 - June 2018*

PUBLICATIONS

" † " : refers to the first student author and " * " : refers to the corresponding author.

1. **[IST'23] Stratified random sampling for neural network test input selection. (CCF-B)**

   Zhuo Wu, Zan Wang, Junjie Chen, Hanmo You, <u>**Ming Yan**</u>, Lanjun Wang*.

   In: Information and Software Technology, 2023, pages to appear.

2. **[Journal of Software'23] Test Case Selection for Deep Neural Networks via Data Mutation. (CCF-B)**

   Xuejie Cao, Junjie Chen*, <u>**Ming Yan**</u>, Hanmo You, Zhuo Wu, Zan Wang.

   In: Journal of Software, 2023, pages to appear (in Chinese).

3. **[JSEP'23] Revisiting Deep Neural Network Test Coverage from the Test Effectiveness Perspective. (CCF-B)**

   <u>**Ming Yan**</u>, Junjie Chen*, Xuejie Cao, Zhuo Wu, Yuning Kang, Zan Wang.

   In: Journal of Software: Evolution and Process, 2023, pages to appear.

4. **[ICSE-SEIP'23] Achieving Last-Mile Functional Coverage in Testing Chip Design Software Implementations. (CCF-A)**

   <u>**Ming Yan**</u>, Junjie Chen*, Hangyu Mao, Jiajun Jiang, Jianye Hao, Xingjian Li, Zhao Tian, Zhichao Chen, Dong Li, Zhangkong Xian, Yanwei Guo, Wulong Liu, Bin Wang, Yuefeng Sun, Yongshun Cui.

   In: The 45th International Conference on Software Engineering, SEIP track, May 14-20, 2023, pages to appear, Melbourne Convention and Exhibition Centre, Melbourne, Australia.

5. [**ASE-NIER'22**] **An Empirical Study on Numerical Bugs in Deep Learning Programs.**

    Gan Wang, Zan Wang, Junjie Chen*, Xiang Chen, <u>Ming Yan</u>.

    In: The 37th IEEE/ACM International Conference on Automated Software Engineering, NIER track, October 10-14, 2022, pages to appear, Oakland Center, Michigan, USA

6. [**FSE'21**] **Exposing Numerical Bugs in Deep Learning via Gradient Back-propagation. (CCF-A)**

    <u>Ming Yan</u>, Junjie Chen*, Xiangyu Zhang, Lin Tan, Gan Wang, Zan Wang.

    In: The 29th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, August 23-28, 2021, 627-638, Athens, Greece.

    ACM SIGSOFT Distinguished Paper Award Nominee

7. [**FSE'20**] **Deep Learning Library Testing via Effective Model Generation. (CCF-A)**

    Zan Wang, <u>Ming Yan</u>**†**, Junjie Chen*, Shuang Liu, Dongdi Zhang.

    In: The 28th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, November 8-13, 2020, 788-799, Sacramento, California, United States.

    🏆 **ACM SIGSOFT Distinguished Paper Award**

8. [**Journal of Software'20**] **Survey on testing of deep neural networks. (CCF-B)**

    Zan Wang, <u>Ming Yan</u>**†**, Shuang Liu*, Junjie Chen, Dongdi Zhang, Zhuo Wu, Xiang Chen.

    In: Journal of Software, 2020,31(5):1255−1275 (in Chinese).

9. [**TOSEM'20**] **Practical Accuracy Estimation for Efficient Deep Neural Network Testing.(CCF-A)**

    Junjie Chen, Zhuo Wu, Zan Wang, Hanmo You, Lingming Zhang, <u>Ming Yan</u>.

    In: ACM Transactions on Software Engineering and Methodology (TOSEM),2020, 29(4): 1-35.,(Selected for ESEC/FSE 2021 Journal-First Presentation)

HONORS AND AWARDS

- Huawei Scholarship, Huawei - 2024
- Outstanding Ph.D Student Forum, CCF ChinaSoft - 2023
- Outstanding Contribution Award, Huawei & Tianjin University - 2023
- CIE Outstanding Master Dissertation Award, The Chinese Institute of Electronics - 2022
- Outstanding Graduate Student Award, Tianjin University (master's degree) - 2021
- Outstanding Master Dissertation Award, Tianjin University - 2021
- National Scholarship, Ministry of Education - 2020
- Innovation Scholarship, College of Intelligence and Computing, Tianjin University - 2020
- ACM SIGSOFT Distinguished Paper Award - 2020
- Outstanding Graduate Student Awards, Tianjin University (bachelor's degree) - 2018

VOLUNTEER EXPERIENCE

- **2024: ECOOP Artifact Evaluation Committee**
- **2023: ISSTA Artifact Evaluation Committee**
- 2024: ISSTA *co-reviewer*
- 2023: ESEC/FSE, ASE, ICSE (2024) *co-reviewer*
- 2022: ESEC/FSE, ASE *co-reviewer*
- 2021: ISSTA, TDSC *co-reviewer*
- 2020: ISSTA Tool Demo, JCST, COMPSAC, Journal of Software *co-reviewer*