

YINLIN DENG

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RESEARCH INTEREST

My research interest lies broadly in the intersection of software engineering and machine learning. I am interested in developing intelligent analysis, testing, verification, and synthesis techniques to improve the reliability, robustness, and performance of software systems, especially for machine learning systems.

Currently, I focus on testing machine learning libraries, which serve as the foundation for building, training, and deploying deep learning models. My previous work has helped to find **275** real-world bugs in popular open-source deep learning libraries including [PyTorch](#), [TensorFlow](#), [JAX](#), and [OneFlow](#).

EDUCATION

University of Illinois Urbana Champaign (UIUC) Ph.D. student in Computer Science Advisor: Prof. Lingming Zhang	Illinois, USA 2021–present
Peking University B.Sc. in Computer Science, Turing Class	Beijing, China 2017–2021

PUBLICATIONS

Fuzzing Deep-Learning Libraries via Automated Relational API Inference Yinlin Deng* , Chenyuan Yang*, Anjiang Wei, Lingming Zhang [paper] [code]	ESEC/FSE'22
Free Lunch for Testing: Fuzzing Deep-Learning Libraries from Open Source Anjiang Wei, Yinlin Deng , Chenyuan Yang, and Lingming Zhang [paper] [code]	ICSE'22
Coverage-Guided Tensor Compiler Fuzzing with Joint IR-Pass Mutation Jiawei Liu, Yuxiang Wei, Sen Yang, Yinlin Deng , and Lingming Zhang [paper] [code] [artifact]	OOPSLA'22

** denotes joint first authors.*

PROFESSIONAL EXPERIENCE

Research Intern at Fujitsu Research of America Topic: Feature engineering for Automated Machine Learning (AutoML) Manager: Mukul Prasad, Mentor: Mehdi Bahrami	June 2022–Aug. 2022
Research Intern at Microsoft Research, Asia Topic: Table range detection for Spreadsheet Intelligence Manager: Shi Han, Mentor: Xiao Lv	June 2020–Jan. 2021
STEP Intern at Google Topic: Static deep learning model compression for Federated Learning	July 2019–Sept. 2019

HONORS & AWARDS

- SIGSOFT CAPS Travel Grant for ESEC/FSE 2022
- Gold Medal in the ICPC Asia-East Continent Final contest 2019
- Gold Medal in the ICPC Asia Regional Contest Nanjing Site 2019
- Most innovative Project in Google AI/ML Winter Camp Beijing Site 2019
- Merit student in Peking University 2017
- Silver Medal in the National Olympiad in Informatics (NOI) 2015

SERVICE

Co-Reviewer	FSE'22, ASE'22.
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