

Yu Liu

Ph.D. Student

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🌐 [sweetStreet](https://sweetstreet.github.io)

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Research Interests

Fusion of [software engineering](#) and [program languages](#). Specific topics include testing and debugging.

Education

2019–present **Ph.D.** (in progress), *The University of Texas at Austin*
Supervisor. Prof. Milos Gligoric

2015–2019 **B.Eng.**, *Nanjing University*

Publications

- [6] **Yu Liu**, Pengyu Nie, Anna Guo, Milos Gligoric, and Owolabi Legunsen. Extracting inline tests from unit tests. In *ISSTA*, 1–10. 2023.
- [5] **Yu Liu**, Jiyang Zhang, Pengyu Nie, Milos Gligoric, and Owolabi Legunsen. More precise regression test selection via reasoning about semantics-modifying changes. In *ISSTA*, 1–10. 2023.
- [4] **Yu Liu**, Zachary Thurston, Alan Han, Pengyu Nie, Milos Gligoric, and Owolabi Legunsen. pytest-inline: An inline testing tool for python. In *ICSE Demo*, 1–4. 2023.
- [3] **Yu Liu**, Pengyu Nie, Owolabi Legunsen, and Milos Gligoric. Inline tests. In *ASE*, 1–11. 2022.
- [2] **Yu Liu**, Rahulkrishna Yandrapally, Anup K. Kalia, Saurabh Sinha, Rachel Tzoref-Brill, and Ali Mesbah. Crawlable: Computing natural-language labels for UI test cases. In *AST*, 103–114. 2022.
- [1] Jiyang Zhang, **Yu Liu**, Milos Gligoric, Owolabi Legunsen, and August Shi. Comparing and combining analysis-based and learning-based regression test selection. In *AST*, 17–28. 2022.

Scholarships and Awards

2023 Graduate School Continuing Fellowship, The University of Texas at Austin

2020 Grace Hopper Scholarships, Google

2019 Outstanding Graduates, Nanjing University

Mentoring

Three undergraduate students.

Undergrad Anna Guo (2023–present; co-authored [6])

Undergrad Alan Han (2022; co-authored [4])
Undergrad Zachary Thurston (2022; co-authored [4])

Service

ICSE 22,21 Sub-reviewer, International Conference on Software Engineering
2022 Volunteer, ISSS at UT Austin
PLDI 2022 Volunteer, Programming Language Design and Implementation Conference
2016 Vice President, College Youth Association

Teaching

Fall 2022 Teaching Assistant, Engineering Dynamic Program Analysis
Fall 2020 Teaching Assistant, Software Design and Implementation I

Professional Experience

Jun–Sep 2023 **Software Engineer Intern**, *Google*, Mountain View

- Inferred important layers in ML model and highlighted these nodes in TensorFlow graph.
- Implemented a service module with frameworks based on **Scaffolding** and **Protocol Buffers** to populate important layers to front end.

May–Aug 2021 **Research Intern**, *IBM*, remotely from Austin

- Generated summarization for UI tests with Probabilistic context-free grammar(PCFG) based on clickable and its context.

May–Aug 2020 **Software Engineer Intern**, *Google*, remotely from Austin

- Wrote integration tests for auto releases to validate data consistency among UI, database and external service.
- Implemented a service module with frameworks based on **Guice** and **Protocol Buffers** to make RPC from front end to stubby service.

Jul–Aug 2019 **Software Engineer Intern**, *Huatai Securities*, Nanjing

- Analyzed public sentiment by model of **TextCNN** and **Bert**. Embedded sentences into vectors with **TF-IDF**. Compared **cosine similarity** of vectors to realize **word sense disambiguation**. Established a dictionary of companies and real controllers. Adjusted importance of words according to their locations and frequency of appearance.

Open Source Contributions

2023 **Exli**, a tool for extracting inline tests from unit tests - <https://github.com/EngineeringSoftware/exli> (paper [6])
2022 **pytest-inline**, a Python framework for inline testing - <https://github.com/pytest-dev/pytest-inline> (paper [4])
2022 **I-Test**, a Java framework for writing inline tests - <https://github.com/EngineeringSoftware/inlinetest> (paper [3])