

# LIN, Yun

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## PARTICULARS

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### EDUCATION

Fudan University  
Ph. D. in Computer Science

Shanghai, China  
*June 2015*

East China Normal University  
B. Tech. in Software Engineering

Shanghai, China  
*June 2010*

### RESEARCH INTERESTS

My research interest includes auto-debugging and testing, code recommendation, code clone, and refactoring. Based on my research work, I devoted myself to developing some software tools to relieve the burden of software developers in practice. I now mainly focus on building novel debuggers based on program analysis and machine learning techniques.

### DISSERTATION

Title: "Differencing-based Pattern Extraction and Reuse for Code Clones"  
Advisor: Prof. Peng, Xin and Prof. Zhao, Wenyun

My thesis develops a series of clone-diff-based approaches for pattern extraction and reuse, which aims to help developers have a deep insight into code clones and accomplish clone-related software maintenance tasks more efficiently. These approaches include an efficient clone diff algorithm with regard to code syntax, a recommendation approach to suggest where and how to modify pasted code, a pattern extraction technique to identify recurring designs and extract them into reusable templates for code generation, and a summarization approach to categorizing and visualizing code clone.

### ACADEMIC HONORS

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- The National Scholarship in China, Fudan University, 2014-2015.
- The Outstanding Doctoral Entrance Scholarship, Fudan University, 2012.

### RESEARCH EXPERIENCE

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- **Research Fellow, School of Computing, National University of Singapore**, May 2016 - Now.
- **Research Fellow, School of Computer Science and Engineering, Nanyang Technological University**, Oct 2015 - Apr 2016.
- **Associate Scientist, Temasek Laboratory, National University of Singapore** Mar 2013 - Nov 2013.

### TEACHING EXPERIENCE

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- **Teaching Assistant.** Software Engineering, Prof. Peng, Xin, Winter 2013, Fudan University.

## PUBLICATIONS

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### PAPERS

1. **Yun Lin**, Jun Sun, Lyly Tran, Guandong Bai, Haijun Wang, and Jinsong Dong. Break the Dead End of Dynamic Slicing: Localizing Data and Control Omission Bug. The 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018), pp. 509-519.
2. Xinyu Wang, Jun Sun, Zhenbang Chen, Peixin Zhang, Jingyi Wang, and **Yun Lin**. Towards Optimal Concolic Testing. The 40th International Conference on Software Engineering (ICSE 2018), pp. 291-302. (**Distinguished Paper**).
3. **Yun Lin**, Guozhu Meng, Yinxing Xue, Zhenchang Xing, Jun Sun, Xin Peng, Yang Liu, Wenyun Zhao and Jinsong Dong. Mining Implicit Design Templates for Actionable Code Reuse. The 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017), pp. 394-404.
4. **Yun Lin**, Jun Sun, Yinxing Xue, Yang Liu, and Jinsong Dong. Feedback-based Debugging. The 39th ACM SIGSOFT International Conference on Software Engineering (ICSE 2017), pp. 393-403.
5. **Yun Lin**, Xin Peng, Yuanfang Cai, Danny Dig, Diwen Zheng, and Wenyun Zhao. Interactive and Guided Architectural Refactoring with Search-Based Recommendation. The 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2016), pp.535-546.
6. **Yun Lin**, Xin Peng, Zhenchang Xing, Diwen Zheng, and Wenyun Zhao. Clone-Based and Interactive Recommendation for Modifying Pasted Code. The 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2015), pp. 520-531.
7. **Yun Lin**, Zhenchang Xing, Yinxing Xue, Yang Liu, Xin Peng, Jun Sun, and Wenyun Zhao. Detecting Differences across Multiple Instances of Code Clones. The 36th International Conference on Software Engineering (ICSE 2014), pp. 164-174.
8. **Yun Lin**, Zhenchang Xing, Xin Peng, Yang Liu, Jun Sun, Wenyun Zhao, and Jinsong Dong. Clonepedia: Summarizing Code Clones by Common Syntactic Context for Software Maintenance. The 30th International Conference on Software Maintenance and Evolution (ICSME 2014), pp. 341-350.

### PAPERS UNDER REVIEW

9. Pardeep Kumar, **Yun Lin**, Guandong Bai, Andrew Paverd, Jinsong Dong, and Andrew Martin. Smart Grid Metering Networks: A Survey on Security, Privacy and Open Research Issue. IEEE Communication Surveys and Tutorials (COMST, IF=20.34, minor revision)
10. Jun Sun, **Yun Lin**<sup>\*</sup>, Hairui Zhang, Dongjing Gao, Xin Peng and Jinsong Dong, Improving Concolic Testing through Learning. IEEE Transaction on Software Engineering (TSE, IF=3.33, corresponding author).
11. Haijun Wang, **Yun Lin**<sup>#</sup>, Zijiang Yang, Jun Sun, Yang Liu, Jinsong Dong, Qinghua Zheng, and Ting Liu. Explaining Regressions via Alignment Slicing and Mending. IEEE Transaction on Software Engineering (TSE, IF=3.33, co-first author).

### PAPERS UNDER WORK

12. **Yun Lin**, Jun Sun, Lyly Tran, Li Du, Weining Hao, and Jinsong Dong. Guiding Input Generation via Neural Network: A Gradient Descent Based Testing Approach.
13. **Yun Lin**, Jun Sun, Gordon Fraser, and Jinsong Dong. An Inter-procedural Approach for Improving Fitness of Search-Based Testing.
14. **Yun Lin**, Dinil Divakaran, Lin Gui, Ling Shi, and Jinsong Dong. A RNN-based Approach for Detecting Man-In-The-Middle Attack via Monitoring TLS Traffic.

## TALKS

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### CONFERENCE TALKS

1. Break the Dead End of Dynamic Slicing: Localizing Data and Control Omission Bug. The 33rd IEEE/ACM International Conference on Automated Software Engineering (ASE 2018), Montpellier, France.
2. Mining Implicit Design Templates for Actionable Code Reuse. The 32nd IEEE/ACM International Conference on Automated Software Engineering (ASE 2017), UIUC, USA.

3. Feedback-based Debugging. The 39th ACM SIGSOFT International Conference on Software Engineering (ICSE 2017), Buenos Aires, Argentina.
4. Interactive and Guided Architectural Refactoring with Search-Based Recommendation. The 49th CREST Open Workshop, University of College London, London, UK.
5. Interactive and Guided Architectural Refactoring with Search-Based Recommendation. The 24th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2016), Seattle, USA.
6. Clone-Based and Interactive Recommendation for Modifying Pasted Code. The 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2015), Bergamo, Italy.
7. Detecting Differences across Multiple Instances of Code Clones. The 36th International Conference on Software Engineering (ICSE 2014), Hyderabad, India.
8. Clonepedia: Summarizing Code Clones by Common Syntactic Context for Software Maintenance. The 30th International Conference on Software Maintenance and Evolution (ICSME 2014), Victoria, Canada.

## PROFESSIONAL ACTIVITIES

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- Publication Chair, 22nd International Conference on Engineering of Complex Computer System (ICECCS'17), Fukuoka, Japan, 2017.

## SERVICE

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- Reviewer (in year of 2019) - *Software Engineering Technology and Application (SETA) of the 43rd COMPSAC [C], IEEE International Conference on Software Analysis, Evolution, and Reengineering [C]*.
- Reviewer (in year of 2018) - *IEEE Transaction on Software Engineering [J], ACM Transactions on Software Engineering and Methodology [J], ACM Transactions on Internet Technology [J], Empirical Software Engineering [J], Software Quality Journal [J], IEEE International Conference on Computers, Software & Applications [C]*.
- Reviewer (in year of 2017) - *IEEE Transaction on Software Engineering [J], Software Quality Journal [J], International Conference on Software Evolution and Maintenance [C] (tool demonstration), International Conference on Program Comprehension [C]*.
- Reviewer (in year of 2016) - *IEEE Transaction on Software Engineering [J], Automated Software Engineering [J], Journal of Computer Science [J], Asia-Pacific Software Engineering Conference [C]*.
- Reviewer (in year of 2015) - *International Workshop on Refactoring [C], Journal of Computer Science [J], International Conference on Software Analysis, Evolution, and Reengineering [C], Asia-Pacific Software Engineering Conference [C], International Conference on Software Engineering & Knowledge Engineering [C]*.

## LANGUAGES

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Proficient in English and Mandarin.

## REFERENCES

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