# Tao Zhang

## Personal Particulars

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## Educational Background

- Doctor of Philosophy (Sept. 2008-Feb. 2013)
  Department of Computer Science and Engineering, University of Seoul, Seoul, South Korea
  Advisor: Prof. Byungjeong Lee
  Dissertation: A Bug Triage and Localization Technique Based on Bug Reports Classification

- Master of Engineering (Sept. 2005-Mar. 2008)
  College of Software, Northeastern University, Shenyang, China
  Advisor: Prof. Chaowan Yin
  Thesis: Research and Implementation of Globus Sandglass Model Based Steel Transportation Service System

- Bachelor of Science in Engineering (Sept. 2000-Jul. 2005)
  Department of Automation, Northeastern University, Shenyang, China

## Research Experience

- Associate Professor (Sept. 2019-Present), School of Computer Science and Engineering, Macau University of Science and Technology, Macao SAR
- Associate Professor (Dec. 2016-Aug. 2019), College of Computer Science and Technology, Harbin Engineering University, Harbin, China
- Assistant Professor (Feb. 2016-Dec. 2016), School of Computer Science and Technology, Nanjing University of Posts and Telecommunications, Nanjing, China
- Postdoctoral Fellow (Nov. 2014-Nov.2015), Department of Computing, The Hong Kong Polytechnic University, Hong Kong SAR
- Postdoctoral Fellow (Mar. 2014-Aug. 2014), Faculty of Computer Science and Information Technology, University of Malaya, Kuala Lumpur, Malaysia
- Research Professor (Mar. 2013-Feb. 2014), Department of Computer Science and Engineering, University of Seoul, Seoul, South Korea

## Industrial Experience

- Software Engineer (Mar. 2008-Jul. 2008), Division of Network Security, Neusoft, China
- Intern (Jul. 2007-Nov. 2007), Division of Network Security, Neusoft, China

## Honors and Awards

- Top Reviewer Award 2020, Information and Software Technology (IST), May 2021
- Best Paper Award, 16th Korea Conference on Software Engineering (KCSE), Feb. 2014
- Honor Prize, 18th Samsung HumanTech Paper Award, Feb. 2012
- Bronze Prize, IEEE Seoul Section Student Paper Contest, Dec. 2011
- Second Place Award, National Senior High School Mathematics Tournament, Oct. 1999

## Research Area
- AI for Software Engineering
- Mining Software Repositories
- Security and Privacy for Mobile Apps

## Publications
**(\* indicates that I am a corresponding/co-corresponding author)**
### Representative Papers
- Yao Li, **Tao Zhang**\*, Xiapu Luo, Haipeng Cai, Sen Fang, and Dawei Yuan, "Do Pretrained Language Models Indeed Understand Software Engineering Tasks?", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 10, pp. 4639-4655, October 2023.
- Youshuai Tan, Jinfu Chen, Weiyi Shang, **Tao Zhang**\*, Sen Fang, Xiapu Luo, Zijie Chen, and Shuhao Qi, "STRE: An Automated Approach to Suggesting App Developers When to Stop Reading Reviews", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 8, pp. 4135-4151, August 2023.
- Sen Fang, **Tao Zhang**\*, Youshuai Tan, He Jiang, Xin Xia, and Xiaobing Sun, "RepresentThemAll: A Universal Learning Representation of Bug Reports", in *Proc. of the 45th International Conference on Software Engineering (ICSE'23)*, May 14-20, 2023, pp. 602-614.
- **Tao Zhang**, Jiachi Chen, Xian Zhan, Xiapu Luo, David Lo, and He Jiang, "Where2Change: Change Request Localization for App Reviews", *IEEE Transactions on Software Engineering (TSE)*, Vol. 47, No. 11, pp. 2590-2616, November 2021.
### Full Paper List
**International Journal Papers**
- Guodong Fan, Shizhan Chen, Cuiyun Gao, Jianmao Xiao, **Tao Zhang**, and Zhiyong Feng, "Rapid: Zero-shot Domain Adaptation for Code Search with Pre-trained Models", *ACM Transactions on Software Engineering and Methodology (TOSEM)*, Accepted, 2024.
- Dawei Yuan, Xiao Peng, Zijie Chen, **Tao Zhang**\*, and Ruijia Lei, "Code Context-Based Reviewer Recommendation", *Frontiers of Computer Science (FCS)*, Accepted, 2023.
- Jie Cai, Bin Li, **Tao Zhang**, Jiale Zhang, and Xiaobing Sun, "Fine-Grained Smart Contract Vulnerability Detection by Heterogeneous Code Feature Learning and Automated Dataset Construction", *Journal of Systems and Software (JSS)*, Vol. 209, Article 111919, March 2024.
- Sicong Cao, Xiaobing Sun, Lili Bo, Rongxin Wu, Bin Li, Xiaoxue Wu, Chuanqi Tao, **Tao Zhang**, and Wei Liu, "Learning to Detect Memory-Related Vulnerabilities", *ACM Transactions on Software Engineering and Methodology (TOSEM)*, Vol. 33, No. 2, Article No. 43, pp. 1-35, February 2024.
- Yao Li, Zhi Xiong, **Tao Zhang**\*, Qinkun Zhang, Ming Fan, and Lei Xue, "Ensemble Framework Combining Family Information for Android Malware Detection", *The Computer Journal*, Vol. 66, No. 11, pp. 2721-2740, November 2023.
- Yao Li, **Tao Zhang**\*, Xiapu Luo, Haipeng Cai, Sen Fang, and Dawei Yuan, "Do Pretrained Language Models Indeed Understand Software Engineering Tasks?", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 10, pp. 4639-4655, October 2023.

- Xiaobing Sun, Zhenlei Ye, Lili Bo, Xiaoxue Wu, Ying Wei, **Tao Zhang**, and Bin Li, "Automatic Software Vulnerability Assessment by Extracting Vulnerability Elements", *Journal of Systems and Software (JSS)*, Vol. 204, Article 111790, October 2023.
- Youshuai Tan, Jinfu Chen, Weiyi Shang, **Tao Zhang**\*, Sen Fang, Xiapu Luo, Zijie Chen, and Shuhao Qi, "STRE: An Automated Approach to Suggesting App Developers When to Stop Reading Reviews", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 8, pp. 4135-4151, August 2023.
- Dawei Yuan, Xiaohui Wang, Yao Li, and **Tao Zhang**\*, "Optimizing Smart Contract Vulnerability Detection via Multi-Modality Code and Entropy Embedding", *Journal of Systems and Software (JSS)*, Vol. 202, Article 111699, August 2023.
- Dawei Yuan, Sen Fang, **Tao Zhang**\*, Zhou Xu, and Xiapu Luo, "Java Code Clone Detection by Exploiting Semantic and Syntax Information from Intermediate Code-Based Graph", *IEEE Transactions on Reliability (TR)*, Vol. 72, No. 2, pp. 511-526, June 2023.
- Ying Wei, Lili Bo, Xiaobing Sun, Bin Li, **Tao Zhang**, and Chuanqi Tao, "Automated Event Extraction of CVE Descriptions", *Information and Software Technology (IST)*, Vol. 158, Article 107178, June 2023.
- He Jiang, Yulong Li, Shikai Guo, Xiaochen Li, **Tao Zhang**, Hui Li, and Rong Chen, "DupHunter: Detecting Duplicate Pull Requests in Fork-Based Development", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 4, pp. 2920-2940, April 2023.
- Le Yu, Haoyu Wang, Xiapu Luo, **Tao Zhang**, Kang Liu, Jiachi Chen, Hao Zhou, Yutian Tang, and Xusheng Xiao, "Towards Automatically Localizing Function Errors in Mobile Apps with User Reviews", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 4, pp. 1464-1486, April 2023.
- Jianwei Zeng, Yutong He, **Tao Zhang**\*, Zhou Xu, and Qiang Han, "CLG-Trans: Contrastive Learning for Code Summarization via Graph Attention-Based Transformer", *Science of Computer Programming (SCP)*, Vol. 226, Article 102925, March 2023.
- Kunsong Zhao, Zhou Xu, Meng Yan, **Tao Zhang**, Lei Xue, Ming Fan, and Jacky Keung, "The Impact of Class Imbalance Techniques on Crashing Fault Residence Prediction models", *Empirical Software Engineering (EMSE)*, Vol. 28, No. 2, Article 49, March 2023.
- Zhou Liao, Shuwei Song, Hang Zhu, Xiapu Luo, Zheyuan He, Renkai Jiang, Ting Chen, Jiachi Chen, **Tao Zhang**, and Xiaosong Zhang, "Large-Scale Empirical Study of Inline Assembly on 7.6 Million Ethereum Smart Contracts", *IEEE Transactions on Software Engineering (TSE)*, Vol. 49, No. 2, pp. 777-801, February 2023.
- Zhou Zhou, Lili Bo, Xiaoxue Wu, Xiaobing Sun, **Tao Zhang**, Bin Li, Jiale Zhang, and Sicong Cao, "SPVF: Security Property Assisted Vulnerability Fixing via Attention-Based Models", *Empirical Software Engineering (EMSE)*, Vol. 27, No. 7, Article 171, December 2022.
- Sen Fang, **Tao Zhang**\*, Youshuai Tan, Zhou Xu, Zhixin Yuan, and Lingze Meng, "PRHAN: Automated Pull Request Description Generation Based on Hybrid Attention Network", *Journal of Systems and Software (JSS)*, Vol. 185, Article 111160, March 2022.
- Yan Lei, Huan Xie, **Tao Zhang**, Meng Yan, Zhou Xu, and Chengnian Sun, "Feature-FL: Feature-Based Fault Localization", *IEEE Transactions on Reliability (TR)*, Vol. 71, No. 1, pp. 264-283, March 2022.
- Zhou Xu, Kunsong Zhao, **Tao Zhang**, Chunlei Fu, Meng Yan, Zhiwen Xie, Xiaohong Zhang, and Gemma Catolino, "Effort-Aware Just-in-Time Bug Prediction for Mobile Apps via Cross-Triplet Deep Feature Embedding", *IEEE Transactions on Reliability (TR)*, Vol. 71, No. 1, pp. 204-220, March 2022.
- **Tao Zhang**, Jiachi Chen, Xian Zhan, Xiapu Luo, David Lo, and He Jiang, "Where2Change:

Change Request Localization for App Reviews", *IEEE Transactions on Software Engineering (TSE)*, Vol. 47, No. 11, pp. 2590-2616, November 2021.

- Kunsong Zhao, Zhou Xu, Meng Yan, **Tao Zhang**, Dan Yang, and Wei Li, "A Comprehensive Investigation of the Impact of Feature Selection Techniques on Crashing Fault Residence Prediction Models", *Information and Software Technology (IST)*, Vol. 139, Article 106652, November 2021.

- Muhammad Ashfaq, Rubing Huang, Dave Towey, Michael Omari, Dmitry Yashunin, Patrick Kwaku Kudjo, and **Tao Zhang**, "SWFC-ART: A Cost-Effective Approach for Fixed-Size-Candidate-Set Adaptive Random Testing through Small World Graphs", *Journal of Systems and Software (JSS)*, Vol. 180, Article 111008, October 2021.

- Jinting Lu, Xiaobing Sun, Bin Li, Lili Bo, and **Tao Zhang**, "BEAT: Considering Question Types for Bug Question Answering via Templates", *Knowledge-Based Systems (KBS)*, Vol. 225, Article 107098, August 2021.

- Kunsong Zhao, Zhou Xu, **Tao Zhang***, Yutian Tang, and Meng Yan, "Simplified Deep Forest Model Based Just-in-Time Defect Prediction for Android Mobile Apps", *IEEE Transactions on Reliability (TR)*, Vol. 70, No. 2, pp. 848-859, June 2021.

- Sen Fang, Youshuai Tan, **Tao Zhang***, Zhou Xu, and Hui Liu, "Effective Prediction of Bug-Fixing Priority via Weighted Graph Convolutional Networks", *IEEE Transactions on Reliability (TR)*, Vol. 70, No. 2, pp. 563-574, June 2021.

- Sen Fang, Youshuai Tan, **Tao Zhang***, and Yepang Liu, "Self-Attention Networks for Code Search", *Information and Software Technology (IST)*, Vol. 134, Article 106542, June 2021.

- Jingxuan Zhang, He Jiang, Zhilei Ren, **Tao Zhang**, and Zhiqiu Huang, "Enriching API Documentation with Code Samples and Usage Scenarios from Crowd Knowledge", *IEEE Transactions on Software Engineering (TSE)*, Vol. 47, No. 6, pp. 1299-1314, June 2021.

- Zhou Xu, **Tao Zhang**, Jacky Keung, Meng Yan, Xiapu Luo, Xiaohong Zhang, Ling Xu, Yutian Tang, "Feature Selection and Embedding Based Cross Project Framework for Identifying Crashing Fault Residence", *Information and Software Technology (IST)*, Vol. 131, Article 106452, March 2021.

- Le Yu, Xiapu Luo, Jiachi Chen, Hao Zhou, **Tao Zhang,** Henry Chang, and Hareton. K. N. Leung, "PPChecker: Towards Accessing the Trustworthiness of Android Apps' Privacy Policies", *IEEE Transactions on Software Engineering (TSE)*, Vol. 47, No. 2, pp. 221-242, February 2021.

- Youshuai Tan, Sijie Xu, Zhaowei Wang, **Tao Zhang***, Zhou Xu, and Xiapu Luo, "Bug Severity Prediction Using Question-and-Answer Pairs from Stack Overflow", *Journal of Systems and Software (JSS)*, Vol. 165, Article 110567, July 2020.

- **Tao Zhang**, Haoming Li, Zhou Xu, Jian Liu, Rubing Huang, and Yiran Shen, "Labeling Issue Reports in Mobile Apps", *IET Software*, Vol. 13, No. 6, pp. 528-542, December 2019.

- Zhou Xu, Shuai Li, Jun Xu, Jin Liu, Xiapu Luo, Yifeng Zhang, **Tao Zhang**, Jacky Keung, and Yutian Tang, "LDFR: Learning Deep Feature Representation for Software Defect Prediction", *Journal of Systems and Software (JSS)*, Vol. 158, Article 110402, December 2019.

- Zhou Xu, Shuai Pang, **Tao Zhang***, Xiapu Luo, Jin Liu, Yutian Tang, Xiao Yu, and Lei Xue, "Cross Project Defect Prediction via Balanced Distribution Adaptation Based Transfer Learning", *Journal of Computer Science and Technology (JCST)*, Vol. 34, No. 5, pp. 1039-1062, August 2019.

- Zhou Xu, Shuai Li, Xiapu Luo, Jin Liu, **Tao Zhang**, Yutian Tang, Jun Xu, Peipei Yuan, and Jacky Keung, "TSTSS: A Two-Stage Training Subset Selection Framework for Cross Version Defect Prediction", *Journal of Systems and Software (JSS)*, Vol. 154, pp. 59-78, August 2019.

- Yiran Shen, Chengwen Luo, Hongkai Wen, **Tao Zhang**, Wen Hu, and Daniela Rus, "Gait-Lock: Protect Virtual and Augmented Reality Headsets Using Gait", *IEEE Transactions on Dependable and Secure Computing (TDSC)*, Vol. 16, No. 3, pp. 484-497, May 2019.
- **Tao Zhang**, Wenjun Hu, Xiapu Luo, and Xiaobo Ma, "A Commit Message-Based Bug Localization for Android Applications", *International Journal of Software Engineering and Knowledge Engineering (IJSEKE)*, Vol. 29, No. 4, pp. 457-487, April 2019.
- Zhou Xu, Jin Liu, Xiapu Luo, Zijiang Yang, Yifeng Zhang, Peipei Yuan, Yutian Tang, and **Tao Zhang**, "Software Defect Prediction Based on Kernel PCA and Weighted Extreme Learning Machine", *Information and Software Technology (IST)*, Vol. 106, pp. 182-200, February 2019.
- He Jiang, Liming Nie, Zeyi Sun, Zhilei Ren, Weiqiang Kong, **Tao Zhang**, and Xiapu Luo, "ROSF: Leveraging Information Retrieval and Supervised Learning for Recommending Code Snippets", *IEEE Transactions on Services Computing (TSC)*, Vol. 12, No. 1, pp. 34-46, January 2019.
- **Tao Zhang**, Jiachi Chen, Xiapu Luo, and Tao Li, "Bug Reports for Desktop Software and Mobile Apps in GitHub: What's the Difference?", *IEEE Software*, Vol. 36, No. 1, pp. 63-71, January 2019.
- Zhou Xu, Peipei Yuan, **Tao Zhang**\*, Yutian Tang, Shuai Li, and Zhen Xia, "HDA: Cross-Project Defect Prediction via Heterogeneous Domain Adaptation with Dictionary Learning", *IEEE Access*, Vol. 6, pp. 57597-57613, October 2018.
- Geunseok Yang, **Tao Zhang**, and Byungjeong Lee, "An Emotion Similarity Based Severity Prediction of Software Bugs: A Case Study of Open Source Projects", *IEICE Transactions on Information and Systems*, Vol. E101-D, No. 8, pp. 2015-2026, August 2018.
- He Jiang, Najam Nazar, Jingxuan Zhang, **Tao Zhang**, and Zhilei Ren, "PRST: A PageRank-Based Summarization Technique for Summarizing Bug Reports with Duplicates", *International Journal of Software Engineering and Knowledge Engineering (IJSEKE)*, Vol. 27, No. 6, pp. 869-896, August 2017.
- Le Yu, **Tao Zhang**, Xiapu Luo, Lei Xue, and Henry Chang, "Toward Automatically Generating Privacy Policy for Android Apps", *IEEE Transactions on Information Forensics and Security (TIFS)*, Vol. 12, No. 4, pp. 865-880, April 2017.
- **Tao Zhang**, Jiachi Chen, Geunseok Yang, Byungjeong Lee, and Xiapu Luo, "Towards More Accurate Severity Prediction and Fixer Recommendation of Software Bugs", *Journal of Systems and Software (JSS)*, Vol. 117, pp. 166-184, July 2016.
- Najam Nazar, He Jiang, Guojun Gao, **Tao Zhang**, Xiaochen Li, and Zhilei Ren, "Source Code Fragment Summarization with Small-Scale Crowdsourcing Based Features", *Frontiers of Computer Science (FCS)*, Vol. 10, No. 3, pp. 504-517, June 2016.
- **Tao Zhang**, He Jiang, Xiapu Luo, and Alvin T.S. Chan, "A Literature Review of Research in Bug Resolution: Tasks, Challenges, and Future Directions", *The Computer Journal*, Vol. 59, No. 5, pp. 741-773, May 2016.
- **Tao Zhang**, Geunseok Yang, Byungjeong Lee, and Alvin T.S. Chan, "Guiding Bug Triage through Developer Analysis in Bug Reports", *International Journal of Software Engineering and Knowledge Engineering (IJSEKE)*, Vol. 26, No. 3, pp. 405-431, April 2016.
- **Tao Zhang** and Byungjeong Lee, "A Novel Technique for Duplicate Detection and Classification of Bug Reports", *IEICE Transactions on Information and Systems*, Vol. E97-D, No. 7, pp. 1756-1768, July 2014.
- **Tao Zhang**, Byungjeong Lee, Hanjoon Kim, and Sooyong Kang, "Folksonomy Reasoning Based Personalized Tagging and Tag Recommendation for Web Page Search", *INFORMATION-An International Interdisciplinary Journal*, Vol. 15, No. 4, pp. 1727-1743, April 2012.

**International Conference Papers**

- Wei Luo, Yemao Luo, Yao Li, and **Tao Zhang***, "StructureTester: Automatic Machine Translation Testing Based on Variation Feature Vector", in *Proc. of the 23rd International Conference on Software Quality, Reliability, and Security (QRS'23)*, Oct. 22-26, 2023, pp. 301-312.
- Sen Fang, **Tao Zhang***, Youshuai Tan, He Jiang, Xin Xia, and Xiaobing Sun, "RepresentThemAll: A Universal Learning Representation of Bug Reports", in *Proc. of the 45th International Conference on Software Engineering (ICSE'23)*, May 14-20, 2023, pp. 602-614.
- Cong Li, Qiang Han, **Tao Zhang**, Bingbing Lei, and Yu He, "Quantity-Simulation-Analysis Method Based Novel RSA Timing Attack Algorithm for Single-Chip Microcomputer Platform", in *Proc. of the 22nd International Conference on Software Quality, Reliability, and Security (QRS'22)*, Dec. 5-9, 2022, pp. 1026-1035.
- Yucen Shi, Ying Yin, Zhengkui Wang, David Lo, **Tao Zhang**, Xin Xia, Yuhai Zhao, and Bowen Xu, "How to Better Utilize Code Graphs in Semantic Code Search", in *Proc. of the 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'22)*, Nov. 14-18, 2022, pp. 722-733.
- Liu Wang, Haoyu Wang, Xiapu Luo, **Tao Zhang**, Shangguang Wang, and Xuanzhe Liu, "Demystifying "Removed Reviews" in iOS App Store", in *Proc. of the 30th ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'22)*, Industry Track, Nov. 14-18, 2022, pp. 1489-1499.
- He Ye, Matias Martinez, Xiapu Luo, **Tao Zhang**, and Martin Monperrus, "SelfAPR: Self-supervised Program Repair with Test Execution Diagnostics", in *Proc. of the 37th IEEE/ACM International Conference on Automated Software Engineering (ASE'22)*, Oct. 10-14, 2022, Article 92, pp. 1-13.
- Zijie Chen, **Tao Zhang***, and Xiao Peng, "A Novel API Recommendation Approach by Using Graph Attention Network", in *Proc. of the 21st International Conference on Software Quality, Reliability, and Security (QRS'21)*, Dec. 6-10, 2021, pp. 726-737.
- Jianwei Zeng, **Tao Zhang***, and Zhou Xu, "DG-Trans: Automatic Code Summarization via Dynamic Graph Attention-Based Transformer", in *Proc. of the 21st International Conference on Software Quality, Reliability, and Security (QRS'21)*, Dec. 6-10, 2021, pp. 786-795.
- Xiaoqi Li, Ting Chen, Xiapu Luo, **Tao Zhang**, Le Yu, and Zhou Xu, "STAN: Towards Describing Bytecodes of Smart Contract", in *Proc. of the 20th International Conference on Software Quality, Reliability, and Security (QRS'20)*, Dec. 11-14, 2020, pp. 273-284.
- Xiaoyun Cheng, Naming Liu, Lin Guo, Zhou Xu, and **Tao Zhang***, "Blocking Bug Prediction Based on XGBoost with Enhanced Features", in *Proc. of the 44th IEEE Annual International Computers, Software, and Applications Conference (COMPSAC'20)*, Jul. 13-17, 2020, pp. 902-911.
- Zhou Xu, **Tao Zhang**, Yifeng Zhang, Yutian Tang, Jin Liu, Xiapu Luo, Jacky Keung, and Xiaohui Cui, "Identifying Crashing Fault Residence Based on Cross Project Model", in *Proc. of the 30th International Symposium on Software Reliability Engineering (ISSRE'19)*, Oct. 28-Nov. 1, 2019, pp. 183-194.
- Zhou Xu, Sizhe Ye, **Tao Zhang***, Zhen Xia, Shuai Pang, Yong Wang, and Yutian Tang, "MVSE: Effort-Aware Heterogeneous Defect Prediction via Multiple-View Spectral Embedding", in *Proc. of the 19th International Conference on Software Quality, Reliability, and Security (QRS'19)*, Jul. 22-26, 2019, pp. 10-17.

- Xian Zhan, **Tao Zhang**, and Yutian Tang, "A Comparative Study of Android Repackaged Apps Detection Techniques", in *Proc. of the 26th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER'19)*, Feb. 24-27, 2019, pp. 321-331.
- Haoming Li, **Tao Zhang\***, and Ziyuan Wang, "Bug or Not Bug? Labeling Issue Reports via User Reviews for Mobile Apps", in *Proc. of the 30th International Conference on Software Engineering and Knowledge Engineering (SEKE'18)*, Jul. 1-3, 2018, pp. 480-485.
- Zhou Xu, Shuai Li, Yutian Tang, Xiapu Luo, and **Tao Zhang**, Jin Liu, and Jun Xu, "Cross Version Defect Prediction with Representative Data via Sparse Subset Selection", in *Proc. of the 26th IEEE International Conference on Program Comprehension (ICPC'18)*, May 27-28, May 27-28, 2018, pp. 132-143.
- Zhou Xu, Jin Liu, Xiapu Luo, and **Tao Zhang**, "Cross-Version Defect Prediction via Hybrid Active Learning with Kernel Principal Component Analysis", in *Proc. of the 25th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER'18)*, Mar. 20-23, 2018, pp. 209-220.
- **Tao Zhang**, Jiachi Chen, He Jiang, Xiapu Luo, and Xin Xia, "Bug Report Enrichment with Application of Automated Fixer Recommendation", in *Proc. of the 25th IEEE International Conference on Program Comprehension (ICPC'17)*, May 22-23, 2017, pp. 230-240.
- He Jiang, Jingxuan Zhang, Zhilei Ren, and **Tao Zhang**, "An Unsupervised Approach for Discovering Relevant Tutorial Fragments for APIs", in *Proc. of the 39th International Conference on Software Engineering (ICSE'17)*, May 20-28, 2017, pp. 38-48.
- Le Yu, Xiapu Luo, Xule Liu, and **Tao Zhang**, "Can we trust the privacy policies of Android Apps?" In *Proc. of the 46th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN'16)*, Jun. 28-Jul. 1, 2016, pp. 538-549.
- Le Yu, **Tao Zhang**, Xiapu Luo, and Lei Xue, "AutoPPG: Towards Automatic Generation of Privacy Policy for Android Applications", in *Proc. of the 5th Annual ACM CCS Workshop on Security and Privacy in Smartphones and Mobile Devices (SPSM'15)*, Oct. 12, 2015, pp. 39-50.
- **Tao Zhang**, Geunseok Yang, Byungjeong Lee, and Alvin T.S. Chan, "Predicting Severity of Bug Report by Mining Bug Repository with Concept Profile", in *Proc. of the 30th ACM Symposium on Applied Computing (SAC'15)*, Apr. 13-17, 2015, pp. 1553-1558.
- **Tao Zhang**, Geunseok Yang, Byungjeong Lee, and Eng Keong Lua, "A Novel Developer Ranking Algorithm for Automatic Bug Triage Using Topic Model and Developer Relations", in *Proc. of the 21st Asia-Pacific Software Engineering Conference (APSEC'14)*, Dec. 1-4, 2014, pp. 223- 230.
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- **Tao Zhang** and Byungjeong Lee, "A Hybrid Bug Triage Algorithm for Developer Recommendation", in *Proc. of the 28th ACM Symposium on Applied Computing (SAC'13)*, Mar. 18-22, 2013, pp. 1088-1094.

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- **Tao Zhang** and Byungjeong Lee, "Complementary Classification Technique Based Personalized Software Requirements Retrieval with Semantic Ontology and User Feedback", in *Proc. of the 10th IEEE International Conference on Computer and Information Technology (CIT'10)*, Jun. 29-Jul. 1, 2010, pp. 1358-1363.
- **Tao Zhang**, Byungjeong Lee, Sooyong Kang, Hanjoon Kim, and Jinseog Kim, "Collective Intelligence-Based Web Page Search: Combining Folksonomy and Link-Based Ranking Strategy", in *Proc. of the 9th IEEE International Conference on Computer and Information Technology (CIT'09)*, Oct. 11-14, 2009, pp. 166-171.

## Patents

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- **Tao Zhang** and Naming Liu, "A User Feedback-Based Software Requirement Search System", Chinese Patent, No. ZL-2018-1-1172938.6, 2020.
- **Tao Zhang**, "A Commit Message-Based Fault Localization Method for Mobile Apps", *Chinese Patent*, No. ZL-2018-1-0392611.3, 2020.
- **Tao Zhang**, Sijie Xu, and Youshuai Tan, "A Bug Rule and Classification Feedback-Based Bug Detection Method", *Chinese Patent*, No. ZL-2018-1-1209067.0, 2019.
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- Byungjeong Lee, **Tao Zhang**, and Geunseok Yang, "Bug Severity Prediction System and Method Using the Concept Profile", *Korean Patent*, No. 10-1775006, 2017.
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- Byungjeong Lee, **Tao Zhang**, and Geunseok Yang, "System and Method for Bug Fixing Developers Recommendation and Bug Severity Prediction Based on Topic Model and Multi- Feature", *Korean Patent*, No. 10-1691083, 2016.
- Byungjeong Lee and **Tao Zhang**, "A Hybrid Bug Triage System and Method for Recommending Bug Fixing Developers", *Korean Patent*, No. 10-1538131, 2015.
- Byungjeong Lee and **Tao Zhang**, "Method for Recommending Appropriate Developers for Software Bug Fixing and Apparatus Thereof", *Korean Patent*, No. 10-1390220, 2014.

- Byungjeong Lee, **Tao Zhang**, and Hanjoon Kim, "System and Method for Utilizing Personalized Tag Recommendation Model in Web Page Search", *Korean Patent*, No. 10-1137491, 2012.
- Byungjeong Lee, **Tao Zhang**, and Hanjoon Kim, "Method of Searching Web Pages Based on a Collective Intelligence Using Folksonomy and Linked-Based Ranking Strategy, and System for Performing the Method", *Korean Patent*, No. 10-1132393, 2012.

## Selected Research Grants

- PI, "Ensemble Detection System Combining Family Information for Android Malware Detection", supported by the Macao Science and Technology Development Fund (FDCT), MOP 739,700, 09/2022-09/2024.
- PI, "Security Vulnerabilities Localization and Report Generation Method for Closed Source Mobile Apps", supported by the Macao Science and Technology Development Fund (FDCT), MOP 1,123,000, 09/2020-09/2023.
- PI, "Bug Localization for Mobile Apps", supported by the National Natural Science Foundation (NSFC), CNY 200,000, 01/2017-12/2019.

## Academic Service

- **Editorial Board Member**
  Journal of Systems and Software (JSS)
- **Board Member of Distinguished Reviewers**
  ACM Transactions on Software Engineering and Methodology (TOSEM)
- **Guest Editor**
  Empirical Software Engineering (EMSE)
  IEEE Transactions on Reliability (TR)
  Journal of Software: Evolution and Process (JSEP)
  Journal of Systems and Software (JSS)
  Science of Computer Programming (SCP)
  IET Software
  Frontiers of Information Technology and Electronic Engineering (FITEE)
- **Steering Committee Member**
  IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER), 2023-Now
- **General Chair**
  IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2023)
- **Program Co-Chair**
  Asia-Pacific Symposium on Internetware (Internetware 2024)
  International Conference on Dependable Systems and Their Applications (DSA 2021)
- **Local Organizing Co-Chair**
  IEEE International Conference on Software Quality, Reliability, and Security (QRS 2020)
- **Organizing Committee Co-Chair**
  IEEE International Workshop on Bug Fixing (IBF 2019-2021)
- **Track Co-Chair**
  ACM Symposium on Applied Computing (SAC 2017-2022): *Software Engineering Track*
- **Publicity Chair/Co-Chair**
  International Joint Conference on Artificial Intelligence (IJCAI 2023)
  International Conference on Blockchain and Trustworthy Systems (BlockSys 2023)
  IEEE International Conference on Software Analysis, Evolution and Reengineering

(SANER 2019)

IEEE International Conference on Software Quality, Reliability, and Security (QRS 2019)

- **TPC Member**

International Conference on Software Engineering (ICSE 2025)

ACM Symposium on the Foundations of Software Engineering (FSE 2024)

International Conference on AI Foundation Models and Software Engineering (FORGE 2024)

International Conference on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2024): *Artifact Track*

IEEE/ACM International Conference on Automated Software Engineering (ASE 2023-2024)

IEEE International Conference on Software Quality, Reliability, and Security (QRS 2020-2024)

ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE 2023)

IEEE/ACM International Conference on Software Engineering (ICSE 2023): *Demonstrations Track*

Asia-Pacific Software Engineering Conference (APSEC 2023)

Asia-Pacific Symposium on Internetware (Internetware 2023)

International Conference on Mining Software Repositories (MSR 2022-2023)

International Symposium on Software Reliability Engineering (ISSRE 2021-2023)

IEEE/ACM International Conference on Automated Software Engineering (ASE 2019, 2023): *Tool Demonstrations Track*

IEEE Pacific Rim International Symposium on Dependable Computing (PRDC 2022)

IEEE International Conference on Software Maintenance and Evolution (ICSME 2020-2022)

International Conference on Network and System Security (NSS 2018, 2020-2022)

Innovations in Software Engineering Conference (ISEC 2020-2021)

IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER 2020)

ACM Symposium on Applied Computing (SAC 2015-2016): *Software Engineering Track*

- **Journal Reviewer**

ACM Computing Surveys (CSUR)

ACM Transactions on Software Engineering and Methodology (TOSEM)

IEEE Transactions on Software Engineering (TSE)

IEEE Transactions on Dependable and Secure Computing (TDSC)

Empirical Software Engineering (EMSE)

IEEE Software

Automated Software Engineering Journal (ASEJ)

Journal of Software: Evolution and Process (JSEP)

Journal of Systems and Software (JSS)

IET Software

Software: Practice and Experience (SPE)

Information and Software Technology (IST)

Software Quality Journal (SQJ)

International Journal of Software Engineering and Knowledge Engineering (IJSEKE)

IEEE Transactions on Reliability (TR)

SCIENCE CHINA Information Sciences

Journal of Software (in Chinese)

Journal of Computer Science and Technology (JCST)
Frontiers of Computer Science (FCS)
Neural Networks
Knowledge-Based Systems (KBS)
SN Computer Science
Innovations in Systems and Software Engineering: A NASA Journal (ISSE)
Sustainable Computing: Informatics and Systems (SUSCOM)
Journal of Ambient Intelligence and Humanized Computing (JAIHC)
Journal of KING SAUD University-Computer and Information Sciences
IEEE Access
Journal of Supercomputing
Connection Science
Cluster Computing
Security and Communication Networks (SCN)
IEEE Signal Processing Letters
Applied Intelligence (APIN)
- **Professional Organization Membership**
  ACM/IEEE/CCF Senior Member
  Member of CCF Technical Committee on Software Engineering
  Board Member of Supervisors, IEEE Macau
- **University-Level Service**
  Member of Teaching Excellence Awards Committee, Macau University of Science and Technology

## Theses and Dissertations Supervised
- Supervisor, "Detecting Smart Contract Vulnerabilities through Analysis of Control and Data Flow in Code Call Graphs", Dissertation by DAWEI YUAN, Ph.D. in Artificial Intelligence, Macau University of Science and Technology, 2023.
- Supervisor, "Analyzing User Reviews for App Release Strategy", Thesis by XIAOHUI WANG, Master of Applied Mathematics and Data Science, Macau University of Science and Technology, 2023.
- Supervisor, "STRE: An Automated Approach to Suggesting App Developers When to Stop Reading Reviews", Thesis by YOUSHUAI TAN, Master of Applied Mathematics and Data Science, Macau University of Science and Technology, 2023.
- Supervisor, "Towards Context-Aware Based Bug Localization", Thesis by XIAO PENG, Master of Applied Mathematics and Data Science, Macau University of Science and Technology, 2022.
- Supervisor, "Q2Q: A Query-to-Query Neural Code Search Approach", Thesis by YUTONG HE, Master of Applied Mathematics and Data Science, Macau University of Science and Technology, 2022.
- Supervisor, "API Usage Pattern Recommendation Considering Human Intentions", Thesis by ZIJIE CHEN, Master of Applied Mathematics and Data Science, Macau University of Science and Technology, 2022.
- Supervisor, "Automatic Code Summarization Research Based on Graph Attention Mechanism", Thesis by JIANWEI ZENG, Master of Science in Information Technology, Macau University of Science and Technology, 2022.
- Supervisor, "Bug Report Enrichment Based on BERT Model", Thesis by LINGZE MENG, Master of Science in Information Technology, Macau University of Science and Technology, 2021.

- Supervisor, "The Research on Automatic Labeling Method for Mobile Application Issue Reports", Thesis by HAOMING LI, Master of Engineering in Software Engineering, Harbin Engineering University, 2020.

## Teaching Courses

**Macau University of Science and Technology**
- SE252 Software Project Management
- SE480 Topics in Software Engineering
- CS240 Database Systems
- CS014 Software Engineering
- CS103 Software Engineering Practices
- SE111 Object-Oriented Programming for Java
- ST001 Special Topic in New Computer Technology
- CS190 Professional Ethics and Communication Skills

**Harbin Engineering University**
- 201406323 Software Quality Assurance and Testing
- 201406415 Software Testing Comprehensive Experiment
- 201406421 Advanced Labs in Software Engineering

**Nanjing University of Posts and Telecommunications**
- B0301340S Algorithm Analysis and Design

## Language and Technical Ability

- **Chinese:** Native Language
- **English:** Proficiency in Listening, Speaking, Reading, and Writing
- **Korean:** Elementary Proficiency
- **Programming Language:** Proficiency in Python, C++, C#, Java, and R
- **Development Tool:** Proficiency in VS, NetBeans, MATLAB, and Eclipse

## Hobby

- Reading, Skating, Mountaineering, and Playing Piano