Yutian Tang

Assistant Professor

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Research Interests

Software Analytic, Android, System Security, Mining Software Repositories, Empirical Software Engineering, Fuzzing

Education

2013.8-2018.9	**Ph.D.**, Department of Computing, The Hong Kong Polytechnic University, Hong Kong SAR, China
Advisor	○ Dr. Xiapu Luo (Associate Professor), and Dr. Hareton Leung (Associate Professor Emeritus)
2009.9-2013.6	**B.Sc.**, Department of Computer Science and Technology, Jilin University, Changchun, China
Advisor	○ Prof. Lan Huang, Associate Dean

Research Positions

2020.10-Present	**Assistant Professor**, *School of Information Science and Technology, ShanghaiTech University, China*
2018.11-2020.05	**Post-doc Research Fellow**, *The Hong Kong Polytechnic University, Hong Kong SAR, China*
2017.08-2018.05	**Part-time Research Assistant**, *The Hong Kong Polytechnic University, Hong Kong SAR, China.*

Vulnerabilities and Patches

CVE	No. CVE-2020-27057
AndroidID	No. 128919672

Fundings

Summary	In total, my research already received **$792,786 or £609,950**
PI	As a principle investigator, my research already received **$431,161 or £329,677**

2020.10-2026.10	"Early career research fund (No.2020F0203-000-14)", ShanghaiTech University, China, Fund: 3,000,000 CNY ($431,161 or £329,677)
CI	As a member, my research already received **2,802,733 HKD ($361,625 or £280,273)**
2018.01-2020.12	"Improving Mobile Users'Privacy Decisions via Exposing Unexpected Sensitive Operations in Hardened Apps",Research Grants Council GRF, Hong Kong, Fund: 416,667 HKD; see `https://cerg1.ugc.edu.hk/cergprod/scrrm00542.jsp?proj_id=15222317`
2018.03-2020.05	"Research and Development of An Advanced IPS System for Aftermarket Telematics;",Innovation and Technology Fund (ITF), Hong Kong, Fund: 2,386,066 HKD (including 1,899,340 HKD from ITF, and 486,726 from company sponsor);

▬▬▬ Publication (* corresponding author)

Summary	ESEC/FSE (1); ASE (2); TReli (1); SANER (3); ICPC (2); ISSRE (2); JSS (2); IST (2); JCST (1)
TSE	**Yutian Tang***, Hao Zhou, Xiapu Luo, Ting Chen, Haoyu Wang, Zhou Xu, and Yan Cai, "XDebloat: Towards Automated Feature-Oriented App Debloating", *IEEE Transactions on Software Engineering,* Top-1 Journal in SE field;(under review)
TReli'20	Kunsong Zhao, Zhou Xu, Tao Zhang, **Yutian Tang**, "Simplified Deep Forest Model based Just-In-Time Defect Prediction for Android Mobile Apps", *IEEE Transactions on Reliability* JCR-Q1;
SAC'21	Kunsong Zhao, Zhou Xu, Meng Yan, **Yutian Tang**, Ming Fan, Gemma Catolino, "Just-in-Time Defect Prediction for Android Apps via Imbalanced Deep Learning Model", *The 36th ACM/SIGAPP Symposium On Applied Computing*; accepted
TSE'21	**Yutian Tang***, Haoyu Wang, Xian Zhan, Xiapu Luo, Yajin Zhou, Hao Zhou, Qiben Yan, Yulei Sui, Jacky Keung, "A Systematical Study on Application Performance Management Libraries for Apps", *IEEE Transactions on Software Engineering,* Top-1 Journal in SE field; in **Major** revision;
IST'20	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)*, CCF-B,JCR-Q1;
ASE'20	Hao Zhou, Haoyu Wang, Yajin Zhou, Xiapu Luo, **Yutian Tang**, Lei Xu, Ting Wang, "Demystifying Diehard Android Apps", *35th IEEE/ACM International Conference on Automated Software Engineering (ASE)* Core A,CCF-A, Top 3 conference in SE;
QRS'20	Kunsong Zhao, Zhou Xu, Tao Zhang, **Yutian Tang**, "Simplified Deep Forest Model based Just-In-Time Defect Prediction for Android Mobile Apps", *20th International Conference on Software Quality, Reliability, and Security (QRS)* CCF-C;
ESEC/FSE'20	**Yutian Tang**, Yulei Sui, Haoyu Wang, Xiapu Luo, Hao Zhou, Zhou Xu, "All Your App Links (are) Belong to Us: Understanding the Threats of Instant Apps based Attacks",*The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE)*, Core A,CCF-A, Top 2 conference in SE, the vulnerability reported is confirmed by Google;

arXiv'20 **Yutian Tang**, Hao Zhou, Zhou Xu, Xiapu Luo, Yan Cai, and Tao Zhang, "Feature Location Benchmark for Decomposing and Reusing Android Apps", *In arXiv, 2020 2005.04008*;

SANER'20 Yan Cai, **Yutian Tang**, Haicheng Li, Le Yu, Hao Zhou, Xiapu Luo, Liang He, Purui Su, "Resource Race Attacks on Android", *27th IEEE International Conference on Software Analysis, Evolution and Reengineering (SANER)*, CCF-B, the vulnerability reported is confirmed by Google;

ASE'19 **Yutian Tang**, Xian Zhan, Hao Zhou, Xiapu Luo, Zhou Xu, Yajin Zhou, Qiben Yan, "Resource Race Attacks on Android", *The 34th IEEE/ACM International Conference on Automated Software Engineering (ASE)*, CCF-A, Core-A;

JSS'19 Zhou Xu, Shuai Li, Jun Xu, Jin Liu, Xiapu Luo, Yifeng Zhang, Tao Zhang, Jacky Keung, **Yutian Tang**, "LDFR: Learning deep feature representation for software defect prediction", Journal of Systems and Software (JSS), JCR-Q1;

QRS'19 Zhou Xu, Sizhe Ye, Tao Zhang, Zhen Xia, Shuai Pang, Yong Wang, **Yutian Tang**, "MVSE: Effort- Aware Heterogeneous Defect Prediction via Multiple-View Spectral Embedding", 19th International Conference on Software Quality, Reliability, and Security (QRS), CCF-C;

ISSRE'19 Zhou Xu, Shuai Pang, Yifeng Zhang, **Yutian Tang**, Jin Liu, Xiapu Luo, Jacky Keung, Xiaohui Cui, "Identifying Crashing Fault Residence Based on Cross Project Model", International Symposium on Software Reliability Engineering (ISSRE), CCF-B, Core-A;

JCST'19 Zhou Xu, Shuai Pang, Tao Zhang, Xiapu Luo, **Yutian Tang**, Xiao Yu, Lei Xue, "Cross Project Defect Prediction via Balanced Distribution Adaptation based Transfer Learning", Journal of Computer Science and Technology (JCST), CCF-B;

JSS'19 Zhou Xu, Shuai Li, Xiapu Luo, Jin Liu, Tao Zhang, **Yutian Tang**, Jun Xu, Peipei Yuan, Jacky Keung, "TSTSS: A Two-Stage Training Subset Selection Framework for Cross Version Defect Prediction", Journal of System and Software (JSS), CCF-B, JCR-Q1;

SANER'19 Xian Zhan, Tao Zhang, **Yutian Tang**, "A Comparative Study of Android Repackaged Apps Detection Techniques", 2019 IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER), CCF-B;

IST'18 Zhou Xu, Jin Liu, Xiapu Luo, Zijiang Yang, Yifeng Zhang, Peipei Yuan, **Yutian Tang**, Tao Zhang, "Software Defect Prediction Based on Kernel PCA and Weighted Extreme Learning Machine", Information and Software Technology (IST), CCF-B, JCR-Q1;

ISSRE'18 Xuejiao Zhao, Hongwei Li, **Yutian Tang**, Dongjing Gao, Lingfeng Bao, Chinghung Lee, "A Smart Context-aware Program Assistant based on Dynamic Programming Event Modeling", The 29th IEEE International Symposium on Software Reliability Engineering (ISSRE), CCF-B, Core-A, Best Industrial Paper Award;

ICPC'18 Zhou Xu, Shuai Li, **Yutian Tang**, Xiapu Luo, Tao Zhang, Jin Liu, Jun Xu, "Cross Version Defect Prediction with Representative Data via Sparse Subset Selection", 26th IEEE/ACM International Conference on Program Comprehension (ICPC), CCF-B, Core-B;

ICPC'17	**Yutian Tang**, Hareton Leung,"Constructing Feature Model by Identifying Variability-aware Modules", 25th IEEE/ACM International Conference on Program Comprehension (ICPC), CCF-B;
SANER'17	**Yutian Tang**, Hareton Leung,"StiCProb: A Novel Feature Mining Approach using Conditional Probability", 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER), CCF-B;
SOFTENG'15	**Yutian Tang**, Hareton Leung,"Feature Mining for Product Line Construction", The First International Conference on Advances and Trends in Software Engineering (SOFTENG);
ICEIS'15	**Yutian Tang**, Hareton Leung,"A Top-down Feature Mining Framework for Software Product Line", 17th International Conference on Enterprise Information Systems (ICEIS);

Teaching

Instructor-ShanghaiTech	CS132 Software Engineering, ShanghaiTech University; 2021 (Spring) (Course for both Undergraduate), (in English and Chinese);
Instructor-ShanghaiTech	CS277 Introduction to Data Science and Fintech, ShanghaiTech University; 2021 (Fall) (Course for both Undergraduate and Graduate), in English and Chinese);
TA-PolyU.HK	COMP3235, Software Project Management, Department of Computing; (Course for both Undergraduate);
TA-PolyU.HK	COMP3233, Software Testing and Quality Assurance, Department of Computing;(Course for both Undergraduate);
TA-PolyU.HK	COMP4911, Capstone Project, Department of Computing; (Course for both Undergraduate);
TA-PolyU.HK	COMP3211, Software Engineering, Department of Computing; (Course for both Undergraduate);
TA-PolyU.HK	COMP309, System Programming, Department of Computing; (Course for both Undergraduate);
TA-PolyU.HK	COMP322, Enterprise Information Systems Project Implementation, Department of Computing (Course for both Undergraduate);

Students under My Supervision

2020.12-now	Hongchen Cao, Research Intern (Undergraduate), ShanghaiTech University.
2021.1-now	Di Xu, Research Intern (Undergraduate), ShanghaiTech University.
2019-2022	Hao Zhou, Ph.D. student, topic: "UI testing for Android" co-supervised with Dr. Xiapu Luo, The Hong Kong Polytechnic University. ○ Paper with me: ASE'19, ASE'20, ESEC/FSE'20, TSE'21.
2020-2022	Zhen Yang, Ph.D. student, co-supervised with Dr. Jackey Keung, The City University of Hong Kong.

Academic Service

Reviewer	**IEEE Transactions on Dependable and Secure Computing;**

Reviewer	**Journal of Computer Security;**
Reviewer	**IEEE Transactions on Reliability;**
Reviewer	**Frontier of Computer Science;**
Reviewer	**SN Applied Sciences;**
Reviewer	**Scientific Programming;**
Reviewer	**IEEE Access;**
Sub-reviewer	IEEE Transactions on Services Computing, IEEE Transactions on Biometrics, Behavior and Identity Science
Invited Speaker	The 12th International Conference on Advanced Infocomm Technology;

University & Department Service

2021	Undergraduate Admission Coordinator, ShanghaiTech University, 11/2020-Tianjin City
2020	Modular High Performance Computing Application Innovation Workshop, 26/11/2020-Room 110, Administration Center, ShanghaiTech University
2020	Graduate Admission Interview, School of Information Science and Technology, 1A-212, SIST, ShanghaiTech University, 23/10/2020;13/09/2020
2020	Undergraduate Seminar, "System Security, Are We There Yet?", School of Information Science and Technology, ShanghaiTech University, 6/11/2020
2020	PI Interview Committee, System and Security Center, 1C-201, SIST, ShanghaiTech University, 19/11/2020

Professional Qualifications & Membership

2012-Present	**Senior Software Engineer**, under "China Qualification Certificate of Computer Science Technology Proficiency"
2017-Present	**Member**,ISACA
2017-Present	**Member**,IEEE
2017-Present	**Member**,HKCS
2020-Present	**Member**,EuroSys

Conference Talks & Invited Talks

ShanghaiTech University	"System Security, Are We There Yet?", **Yutian Tang**, School of Information Science and Technology, ShanghaiTech University, 6/11/2020, Undergraduate Seminar;
Invited Speaker	The 12th International Conference on Advanced Infocomm Technology(2020);
ShanghaiTech University	"Android, Don't Lie to Me", **Yutian Tang**, School of Information Science and Technology, ShanghaiTech University;
ESEC/FSE'20	"All Your App Links are Belong to Us: Understanding the Threats of Instant Apps based Attacks", **Yutian Tang**, in *The ACM Joint European Software Engineering Conference and Symposium on the Fundations of Software Engineering*;

Tongji University	"All Your App Links are Belong to Us: Understanding the Threats of Instant Apps based Attacks", **Yutian Tang**, School of Software, Tongji University;
ASE'19	"Demystifying Application Performance Management Libraries for Android,", **Yutian Tang** in *34th IEEE/ACM International Conference on Automated Software Engineering*;
SANER'17	"StiCProb: A Novel Feature Mining Approach Using Conditional Probability", **Yutian Tang**,in *Proceedings of 24th IEEE International Conference on Software Analysis, Evolution, and Reengineering*;
ICPC'17	"Constructing Feature Model by Identifying Variability-aware Modules", **Yutian Tang**, in *Constructing Feature Model by Identifying Variability-aware Modules*;
SOFTENG'15	"Feature Mining for Product Line Construction", **Yutian Tang**, in *The First International Conference on Advances and Trends in Software Engineering*;
ICEIS'15	"Top-down Feature Mining Framework for Software Product Line,"**Yutian Tang**,in *Proceedings of the International Conference on Enterprise Information System*;

Awards & Scholarships

2018	**Best Industry Paper Award** International Symposium on Software Reliability Engineering, Paper: "A Smart Context-aware Program Assistant based on Dynamic Programming Event Modeling"
2013-2017	**Ph.D. Scholarships**,The Hong Kong Polytechnic University
2012	**Undergraduate Research Award,First Prize**,Jilin University
2012	**Undergraduate Scholarships,Second Prize**, Jilin University
2011	**Undergraduate Scholarships,Third Prize**, Jilin University

Reference

R1	Dr. Xiapu Luo
	Associate Professor, Department of Computing,The Hong Kong Polytechnic University, Email: csxluo@comp.polyu.edu.hk
R2	Pro. Yang Liu
	Full Professor, School of Computer Science and Engineering, Nanyang Technological University, Email: yangliu@ntu.edu.sg
R3	Dr. Yulei Sui
	Senior Lecturer, School of Computer Science, Faculty of Engineering and Information Technology, University of Technology Sydney, Email: yulei.sui@uts.edu.au
R4	Prof. Yan Cai
	Professor, Institute of Software, Chinese Academy of Sciences, Email: ycai.mail@gmail.com
R5	Dr. Haoyu Wang
	Associate Professor, Beijing University of Posts and Telecommunications, Email: haoyuwang@bupt.edu.cn