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# Technical Track

ICSE 2021

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## Accepted Papers

★ Title

★ "Ignorance and Prejudice" in Software Fairness

TECHNICAL TRACK

Jie M. Zhang (<https://conf.researchr.org/profile/icse-2021/jiemzhang>), Mark Harman (<https://conf.researchr.org/profile/icse-2021/markharman>)



Pre-print ([https://discovery.ucl.ac.uk/id/eprint/10123814/1/ICSE2021\\_Ignorance\\_Prejudice%20%285%29.pdf](https://discovery.ucl.ac.uk/id/eprint/10123814/1/ICSE2021_Ignorance_Prejudice%20%285%29.pdf)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/128/-Ignorance-and-Prejudice-in-Software-Fairness>)

★ A Case Study of Onboarding in Software Teams: Tasks and Strategies

TECHNICAL TRACK

An Ju (<https://conf.researchr.org/profile/icse-2021/anju>), Hitesh Sajjani (<https://conf.researchr.org/profile/icse-2021/hiteshsajjani2>), Scot Kelly (<https://conf.researchr.org/profile/icse-2021/scotkelly>), Kim Herzig (<https://conf.researchr.org/profile/icse-2021/kimherzig>)

Pre-print (<https://arxiv.org/abs/2103.05055>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/131/A-Case-Study-of-Onboarding-in-Software-Teams-Tasks-and-Strategies>)



★ A Context-based Automated Approach for Method Name Consistency Checking and Suggestion

TECHNICAL TRACK

Yi Li (<https://conf.researchr.org/profile/icse-2021/yili1>), Shaohua Wang (<https://conf.researchr.org/profile/icse-2021/shaohuawang>), Tien N. Nguyen (<https://conf.researchr.org/profile/icse-2021/tiennnguyen>)

Pre-print (<https://arxiv.org/pdf/2103.00269.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/99/A-Context-based-Automated-Approach-for-Method-Name-Consistency-Checking-and-Suggestio>)

★ A Differential Testing Approach for Evaluating Abstract Syntax Tree Mapping Algorithms

TECHNICAL TRACK

Yuanrui Fan (<https://conf.researchr.org/profile/icse-2021/yuanruifan1>), Xin Xia (<https://conf.researchr.org/profile/icse-2021/xinxia>), David Lo (<https://conf.researchr.org/profile/icse-2021/davidlo>), Ahmed E. Hassan (<https://conf.researchr.org/profile/icse-2021/ahmedehassan>), Yuan Wang (<https://conf.researchr.org/profile/icse-2021/yuanwang>), Shanping Li (<https://conf.researchr.org/profile/icse-2021/shanpingli>)

Pre-print (<https://xin-xia.github.io/publication/icse212.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/48/A-Differential-Testing-Approach-for-Evaluating-Abstract-Syntax-Tree-Mapping-Algorithm>)

★ AID: An Automated Inclusivity-Bug Detector

TECHNICAL TRACK

Amreeta Chatterjee (<https://conf.researchr.org/profile/icse-2021/amreetachatterjee>), Mariam Guizani (<https://conf.researchr.org/profile/icse-2021/mariamguizani>), Catherine Stevens (<https://conf.researchr.org/profile/icse-2021/catherinestevens>), Jillian Emard (<https://conf.researchr.org/profile/icse-2021/jillianemard>), Mary Evelyn May (<https://conf.researchr.org/profile/icse-2021/maryevelynmay>), Margaret Burnett (<https://conf.researchr.org/profile/icse-2021/margaretburnett>), Iftekhar Ahmed (<https://conf.researchr.org/profile/icse-2021/iftekharaahmed>), Anita Sarma (<https://conf.researchr.org/profile/icse-2021/anitasarma>)

Pre-print (<https://ir.library.oregonstate.edu/concern/defaults/ws859n93g>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/94/AID-An-Automated-Inclusivity-Bug-Detector>)

★ ATVHunter: Reliable Version Detection of Third-Party Libraries for Vulnerability Identification in Android Apps

TECHNICAL TRACK

ACM SIGSOFT DISTINGUISHED PAPER

Xian Zhan (<https://conf.researchr.org/profile/icse-2021/zhanxian>), Lingling Fan (<https://conf.researchr.org/profile/icse-2021/linglingfan>), Sen Chen (<https://conf.researchr.org/profile/icse-2021/sencheng>), Feng Wu (<https://conf.researchr.org/profile/icse-2021/fengwu>), Tianming Liu (<https://conf.researchr.org/profile/icse-2021/tianmingliu>), Xiapu Luo (<https://conf.researchr.org/profile/icse-2021/xiapuluo>), Yang Liu (<https://conf.researchr.org/profile/icse-2021/yangliu>)

Pre-print (<https://arxiv.org/pdf/2102.08172.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/18/ATVHunter-Reliable-Version-Detection-of-Third-Party-Libraries-for-Vulnerability-Iden>)

★ AUTOTRAINER: An Automatic DNN Training Problem Detection and Repair System

TECHNICAL TRACK

Xiaoyu Zhang (<https://conf.researchr.org/profile/icse-2021/xiaoyuzhang>), Juan Zhai (<https://conf.researchr.org/profile/icse-2021/juanzhai>), Shiqing Ma (<https://conf.researchr.org/profile/icse-2021/shiqingma>), Chao Shen (<https://conf.researchr.org/profile/icse-2021/chaoshen>)


Pre-print (<https://shiningrain.github.io/papers/Zhang2021ICSE.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/81/AUTOTRAINER-An-Automatic-DNN-Training-Problem-Detection-and-Repair-System>)

★ Abacus: Precise Side-Channel Analysis

TECHNICAL TRACK

Qinkun Bao (<https://conf.researchr.org/profile/icse-2021/qinkunbao>), Zihao Wang (<https://conf.researchr.org/profile/icse-2021/zihaowang1>), Xiaoting Li (<https://conf.researchr.org/profile/icse-2021/xiaotingli>), James Larus (<https://conf.researchr.org/profile/icse-2021/jimlarus>), Dinghao Wu (<https://conf.researchr.org/profile/icse-2021/dinghaowu2>)

Pre-print ([https://github.com/qinkunbao/QIF-paper/raw/master/ICSE2021\\_JUN\\_28/main\\_camera\\_ready.pdf](https://github.com/qinkunbao/QIF-paper/raw/master/ICSE2021_JUN_28/main_camera_ready.pdf))



Important Dates

AoE (UTC-12h)

Fri 12 Feb 2021

Technical Track Camera Ready

Thu 17 Dec 2020

Technical Track Acceptance Notification

Wed 18 Nov - Fri 20 Nov 2020


Technical Track Author Response Period

Fri 28 Aug 2020

Technical Track Submissions Deadline

Program Committee

(<https://conf.researchr.org/committee/icse-2021/icse-2021-papers-program-committee>)




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<https://conf.researchr.org/track/icse-2021/icse-2021-papers?#event-overview>

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Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/110/Abacus-Precise-Side-Channel-Analysis>)

#### ★ An Empirical Analysis of UI-based Flaky Tests

Alan Romano (<https://conf.researchr.org/profile/icse-2021/alanromano>), Zihong Song (<https://conf.researchr.org/profile/icse-2021/zihongsong>), Sampath Grandhi (<https://conf.researchr.org/profile/icse-2021/sampathgrandhi>), Wei Yang (<https://conf.researchr.org/profile/icse-2021/weiyang>), Weihang Wang (<https://conf.researchr.org/profile/icse-2021/weihangwang>)

Pre-print (<https://arxiv.org/abs/2103.02669>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/54/An-Empirical-Analysis-of-UI-based-Flaky-Tests>)



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#### ★ An Empirical Assessment of Global COVID-19 Contact Tracing Applications

Ruoxi Sun (<https://conf.researchr.org/profile/icse-2021/ruoxisun1>), Wei (Zach) Wang (<https://conf.researchr.org/profile/icse-2021/zachwang>), Minhui (Jason) Xue (<https://conf.researchr.org/profile/icse-2021/jasonxue1>), Gareth Tyson (<https://conf.researchr.org/profile/icse-2021/garethtyson>), Seyit Camtepe (<https://conf.researchr.org/profile/icse-2021/seyitcamtepe>), Damith C. Ranasinghe (<https://conf.researchr.org/profile/icse-2021/damithcranasinghe>)

Pre-print (<https://arxiv.org/abs/2006.10933>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/121/An-Empirical-Assessment-of-Global-COVID-19-Contact-Tracing-Applications>)



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#### ★ An Empirical Study of Refactorings and Technical Debt in Machine Learning Systems

Yiming Tang (<https://conf.researchr.org/profile/icse-2021/yimingtang>), Raffi Khatchadourian (<https://conf.researchr.org/profile/icse-2021/raffikhatchadourian>), Mehdi Bagherzadeh (<https://conf.researchr.org/profile/icse-2021/mehdibagherzadeh>), Rhia Singh (<https://conf.researchr.org/profile/icse-2021/rhiasingh>), Ajani Stewart (<https://conf.researchr.org/profile/icse-2021/ajanistewart>), Anita Raja (<https://conf.researchr.org/profile/icse-2021/anitaraja>)

Pre-print ([https://academicworks.cuny.edu/hc\\_pubs/671](https://academicworks.cuny.edu/hc_pubs/671)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/71/An-Empirical-Study-of-Refactorings-and-Technical-Debt-in-Machine-Learning-Systems>)

TECHNICAL TRACK

#### ★ An Empirical Study on Deployment Faults of Deep Learning Based Mobile Applications

Zhenpeng Chen (<https://conf.researchr.org/profile/icse-2021/zhenpengchen>), Huihan Yao (<https://conf.researchr.org/profile/icse-2021/huihanyao>), Yiling Lou (<https://conf.researchr.org/profile/icse-2021/yilinglou>), Yanbin Cao (<https://conf.researchr.org/profile/icse-2021/yanbincao>), Yuanqiang Liu (<https://conf.researchr.org/profile/icse-2021/yuanqiangliu>), Haoyu Wang (<https://conf.researchr.org/profile/icse-2021/haoyuwang>), Xuanzhe Liu (<https://conf.researchr.org/profile/icse-2021/xuanzheliu1>)

Pre-print (<https://chenzhenpeng18.github.io/papers/ICSE21.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/130/An-Empirical-Study-on-Deployment-Faults-of-Deep-Learning-Based-Mobile-Applications>)

TECHNICAL TRACK

#### ★ An Evolutionary Study of Configuration Design and Implementation in Cloud Systems

Yuanliang Zhang (<https://conf.researchr.org/profile/icse-2021/yuanliangzhang>), Haochen He (<https://conf.researchr.org/profile/icse-2021/haochenhe>), Owolabi Legunsen (<https://conf.researchr.org/profile/icse-2021/owolabilegunsen>), Shanshan Li (<https://conf.researchr.org/profile/icse-2021/shanshanli1>), Wei Dong (<https://conf.researchr.org/profile/icse-2021/weidong>), Tianyin Xu (<https://conf.researchr.org/profile/icse-2021/tianyinxu1>)

Pre-print (<https://arxiv.org/pdf/2102.07052.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/65/An-Evolutionary-Study-of-Configuration-Design-and-Implementation-in-Cloud-Systems>) File Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/65/An-Evolutionary-Study-of-Configuration-Design-and-Implementation-in-Cloud-Systems>)

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#### ★ App's Auto-Login Function Security Testing via Android OS-Level Virtualization

Wenna Song (<https://conf.researchr.org/profile/icse-2021/wennasong>), Jiang Ming (<https://conf.researchr.org/profile/icse-2021/jiangming>), Lin Jiang (<https://conf.researchr.org/profile/icse-2021/linjiang1>), Han Yan (<https://conf.researchr.org/profile/icse-2021/hanyan>), Yi Xiang (<https://conf.researchr.org/profile/icse-2021/yixiang>), Yuan Chen (<https://conf.researchr.org/profile/icse-2021/yuanchen>), Jianming Fu (<https://conf.researchr.org/profile/icse-2021/jianmingfu>), Guojun Peng (<https://conf.researchr.org/profile/icse-2021/guojunpeng>)

Pre-print (<https://arxiv.org/abs/2103.03511>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/31/App-s-Auto-Login-Function-Security-Testing-via-Android-OS-Level-Virtualization>)

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#### ★ Are Machine Learning Cloud APIs Used Correctly?

Chengcheng Wan (<https://conf.researchr.org/profile/icse-2021/chengchengwan>), Shicheng Liu (<https://conf.researchr.org/profile/icse-2021/shichengliu>), Henry Hoffmann (<https://conf.researchr.org/profile/icse-2021/hankhoffman>), Michael Maire (<https://conf.researchr.org/profile/icse-2021/michaelmaire>), Shan Lu (<https://conf.researchr.org/profile/icse-2021/shanlu>)

Pre-print ([http://people.cs.uchicago.edu/~cwan/paper/ml\\_api.pdf](http://people.cs.uchicago.edu/~cwan/paper/ml_api.pdf)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/45/Are-Machine-Learning-Cloud-APIs-Used-Correctly->)

TECHNICAL TRACK



#### ★ AutoCCAG: An Automated Approach to Constrained Covering Array Generation

Chuan Luo (<https://conf.researchr.org/profile/icse-2021/chuanluo>), Jinkun Lin (<https://conf.researchr.org/profile/icse-2021/jinkunlin>), Shaowei Cai (<https://conf.researchr.org/profile/icse-2021/shaoweicai>), Xin Chen (<https://conf.researchr.org/profile/icse-2021/xinchen3>), Bing He (<https://conf.researchr.org/profile/icse-2021/binghe>), Bo Qiao (<https://conf.researchr.org/profile/icse-2021/boqiao>), Pu Zhao (<https://conf.researchr.org/profile/icse-2021/puzhao>), Qingwei Lin (<https://conf.researchr.org/profile/icse-2021/qingweilin>), Hongyu Zhang (<https://conf.researchr.org/profile/icse-2021/hongyuzhang>), Wei Wu (<https://conf.researchr.org/profile/icse-2021/weiwu1>), Saravanakumar Rajmohan (<https://conf.researchr.org/profile/icse-2021/saravanakumarrajmohan>), Dongmei Zhang (<https://conf.researchr.org/profile/icse-2021/dongmeizhang>)

Pre-print (<https://www.microsoft.com/en-us/research/uploads/prod/2021/02/2021019487.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/133/AutoCCAG-An-Automated-Approach-to-Constrained-Covering-Array-Generation>)

TECHNICAL TRACK



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**Gabriele Bavota**  
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(<https://conf.researchr.org/profile/icse-2021/gabrielebavota>)

## ★ Automated Query Reformulation for Efficient Search Based on Query Logs from Stack Overflow

Kaibo Cao (<https://conf.researchr.org/profile/icse-2021/kaibocao>), Chunyang Chen

(<https://conf.researchr.org/profile/icse-2021/chunyangchen1>), Sebastian Baltes (<https://conf.researchr.org/profile/icse-2021/sebastianbaltes>), Christoph Treude (<https://conf.researchr.org/profile/icse-2021/christophstreude>), Xiang Chen (<https://conf.researchr.org/profile/icse-2021/xiangchen2>)

🔗 Pre-print (<https://arxiv.org/abs/2102.00826>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/29/Automated-Query-Reformulation-for-Efficient-Search-Based-on-Query-Logs-from-Stack-Ove>)

TECHNICAL TRACK

ACM SIGSOFT DISTINGUISHED PAPER

## ★ Automatic Extraction of Opinion-based Q&amp;A from Online Developer Chats

Preetha Chatterjee (<https://conf.researchr.org/profile/icse-2021/preethachatterjee>), Kostadin Damevski

(<https://conf.researchr.org/profile/icse-2021/davidlo>), Lori Pollock (<https://conf.researchr.org/profile/icse-2021/oripollock1>)

🔗 Pre-print (<https://cpb-us-w2.wpmucdn.com/sites.udel.edu/dist/8/2570/files/2021/02/ICSE21.pdf>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/36/Automatic-Extraction-of-Opinion-based-Q-A-from-Online-Developer-Chats>)

TECHNICAL TRACK

## ★ Automatic Solution Summarization for Crash Bugs

Haoye Wang (<https://conf.researchr.org/profile/icse-2021/haoyewang>), Xin Xia (<https://conf.researchr.org/profile/icse-2021/xinxia>), David Lo (<https://conf.researchr.org/profile/icse-2021/davidlo>), John Grundy (<https://conf.researchr.org/profile/icse-2021/johngundy1>), Xinyu Wang (<https://conf.researchr.org/profile/icse-2021/xinyuwang1>)

🔗 Pre-print (<https://xin-xia.github.io/publication/icse214.pdf>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/64/Automatic-Solution-Summarization-for-Crash-Bugs>)

TECHNICAL TRACK

## ★ Automatic Unit Test Generation for Machine Learning Libraries: How Far Are We?

Song Wang (<https://conf.researchr.org/profile/icse-2021/songwang>), Nishtha Shrestha (<https://conf.researchr.org/profile/icse-2021/nishthashrestha>), Abarna Kucheri Subburaman (<https://conf.researchr.org/profile/icse-2021/abarnakuchersubburaman>), Junjie Wang (<https://conf.researchr.org/profile/icse-2021/junjiewang1>), Moshi Wei (<https://conf.researchr.org/profile/icse-2021/moshiwei1>), Nachiappan Nagappan (<https://conf.researchr.org/profile/icse-2021/nachiappannagappan>)

🔗 Link to publication (<https://www.eecs.yorku.ca/~wangsong/papers/icse2021.pdf>) 🔗 Pre-print (<https://www.eecs.yorku.ca/~wangsong/papers/icse2021.pdf>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/40/Automatic-Unit-Test-Generation-for-Machine-Learning-Libraries-How-Far-Are-We>)

TECHNICAL TRACK

## ★ Automatic Web Testing using Curiosity-Driven Reinforcement Learning

YAN ZHENG (<https://conf.researchr.org/profile/icse-2021/zhengyan>), Yi Liu (<https://conf.researchr.org/profile/icse-2021/yiliu>), Xiaofei Xie (<https://conf.researchr.org/profile/icse-2021/xiaofeixie>), Yepang Liu (<https://conf.researchr.org/profile/icse-2021/yepangliu>), Lei Ma (<https://conf.researchr.org/profile/icse-2021/leima>), Jianye Hao (<https://conf.researchr.org/profile/icse-2021/jianyehao>), Yang Liu (<https://conf.researchr.org/profile/icse-2021/yangliu>)

🔗 Pre-print (<http://arxiv.org/abs/2103.06018>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/21/Automatic-Web-Testing-using-Curiosity-Driven-Reinforcement-Learning>)

TECHNICAL TRACK

## ★ Automatically Matching Bug Reports With Related App Reviews

Marlo Haering (<https://conf.researchr.org/profile/icse-2021/marlohaering>), Christoph Stanik (<https://conf.researchr.org/profile/icse-2021/christophstanik>), Walid Maalej (<https://conf.researchr.org/profile/icse-2021/walidmaalej>)

🔗 Pre-print (<http://arxiv.org/abs/2102.07134>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/25/Automatically-Matching-Bug-Reports-With-Related-App-Reviews>)

TECHNICAL TRACK

## ★ Bounded Exhaustive Search of Alloy Specification Repairs

Simón Gutiérrez Brida (<https://conf.researchr.org/profile/icse-2021/simongutierrezbrida>), Germán Regis

(<https://conf.researchr.org/profile/icse-2021/germanregis>), Guolong Zheng

(<https://conf.researchr.org/profile/icse-2021/guolongzheng>), Hamid Bagheri

(<https://conf.researchr.org/profile/icse-2021/hamidbagheri>), ThanhVu Nguyen

(<https://conf.researchr.org/profile/icse-2021/thanhvnguyen>), Nazareno Aguirre

(<https://conf.researchr.org/profile/icse-2021/nazarenoaguirre>), Marcelo F. Frias

(<https://conf.researchr.org/profile/icse-2021/marceloffrias>)  
🔗 Pre-print (<https://arxiv.org/abs/2103.00327>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/60/Bounded-Exhaustive-Search-of-Alloy-Specification-Repairs>)

TECHNICAL TRACK



## ★ CENTRIS: A Precise and Scalable Approach for Identifying Modified Open-Source Software Reuse

Seunghoon Woo (<https://conf.researchr.org/profile/icse-2021/seunghoonwoo>), Sunghan Park

(<https://conf.researchr.org/profile/icse-2021/sunghanpark>), Seulbae Kim

(<https://conf.researchr.org/profile/icse-2021/seulbaekim>), Heejo Lee (<https://conf.researchr.org/profile/icse-2021/heejolee>), Hakjoo Oh

(<https://conf.researchr.org/profile/icse-2021/hakjoooh>)  
🔗 Pre-print (<https://arxiv.org/abs/2102.06182>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/86/CENTRIS-A-Precise-and-Scalable-Approach-for-Identifying-Modified-Open-Source-Softwar>)

TECHNICAL TRACK

## ★ CHAMP: Characterizing Undesired App Behaviors from User Comments based on Market Policies

Yangyu Hu (<https://conf.researchr.org/profile/icse-2021/yangyuhu>), Haoyu Wang

(<https://conf.researchr.org/profile/icse-2021/haoyuwang>), Tiantong Ji

(<https://conf.researchr.org/profile/icse-2021/xushengxiao1>), Xiapu Luo

(<https://conf.researchr.org/profile/icse-2021/xiapuluo>), Peng Gao

(<https://conf.researchr.org/profile/icse-2021/penggao1>), Yao Guo (<https://conf.researchr.org/profile/icse-2021/yaoguo>)  
🔗 Pre-print (<https://arxiv.org/abs/2103.00712>) 📄 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/4/CHAMP-Characterizing-Undesired-App-Behaviors-from-User-Comments-based-on-Market-Poli>)

TECHNICAL TRACK

## ★ CURE: Code-Aware Neural Machine Translation for Automatic Program Repair

Nan Jiang (<https://conf.researchr.org/profile/icse-2021/nanjiang1>), Thibaud Lutellier

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2021/thibaudlutellier), Lin Tan (<https://conf.researchr.org/profile/icse-2021/linTan>)

Pre-print (<http://arxiv.org/abs/2103.00073>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/50/CURE-Code-Aware-Neural-Machine-Translation-for-Automatic-Program-Repair>)

#### ☆ Can Program Synthesis be Used to Learn Merge Conflict Resolutions? An Empirical Analysis

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Rangeet Pan (<https://conf.researchr.org/profile/icse-2021/rangeetpan>), Vu Le (<https://conf.researchr.org/profile/icse-2021/vule>), Nachiappan Nagappan (<https://conf.researchr.org/profile/icse-2021/nachiappannagappan>), Sumit Gulwani (<https://conf.researchr.org/profile/icse-2021/sumitgulwani>), Shuvendu Lahiri (<https://conf.researchr.org/profile/icse-2021/shuvendulahiri>), Mike Kaufman (<https://conf.researchr.org/profile/icse-2021/mikekaufman>)

Pre-print (<http://arxiv.org/abs/2103.02004>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/109/Can-Program-Synthesis-be-Used-to-Learn-Merge-Conflict-Resolutions-An-Empirical-Analy>)

#### ☆ Code Prediction by Feeding Trees to Transformers

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Seohyun Kim (<https://conf.researchr.org/profile/icse-2021/seohyunkim>), Jinman Zhao (<https://conf.researchr.org/profile/icse-2021/jinmanzhao>), Yuchi Tian (<https://conf.researchr.org/profile/icse-2021/yuchitian2>), Satish Chandra (<https://conf.researchr.org/profile/icse-2021/satishchandra>)

Pre-print (<https://arxiv.org/abs/2003.13848>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/132/Code-Prediction-by-Feeding-Trees-to-Transformers>)

#### ☆ CodeShovel: Constructing Method-Level Source Code Histories

ACM SIGSOFT DISTINGUISHED PAPER

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Felix Grund (<https://conf.researchr.org/profile/icse-2021/felixgrund>), Shaiful Alam Chowdhury (<https://conf.researchr.org/profile/icse-2021/shaifulalamchowdhury>), Nick Bradley (<https://conf.researchr.org/profile/icse-2021/nicholasbradley>), Braxton Hall (<https://conf.researchr.org/profile/icse-2021/braxtonhall1>), Reid Holmes (<https://conf.researchr.org/profile/icse-2021/reidholmes>)

Pre-print ([https://www.cs.ubc.ca/~rtholmes/papers/icse\\_2021\\_grund.pdf](https://www.cs.ubc.ca/~rtholmes/papers/icse_2021_grund.pdf)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/24/CodeShovel-Constructing-Method-Level-Source-Code-Histories>)

#### ☆ Containing Malicious Package Updates in npm with a Lightweight Permission System

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Gabriel Ferreira (<https://conf.researchr.org/profile/icse-2021/gabrielferreira>), Limin Jia (<https://conf.researchr.org/profile/icse-2021/liminjia>), Joshua Sunshine (<https://conf.researchr.org/profile/icse-2021/joshuasunshine>), Christian Kästner (<https://conf.researchr.org/profile/icse-2021/christiankastner>)

Pre-print (<https://arxiv.org/abs/2103.05769>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/37/Containing-Malicious-Package-Updates-in-npm-with-a-Lightweight-Permission-System>)

#### ☆ Data-Driven Synthesis of a Provably Sound Side Channel Analysis

TECHNICAL TRACK

Jingbo Wang (<https://conf.researchr.org/profile/icse-2021/jingbowang>), Chungha Sung (<https://conf.researchr.org/profile/icse-2021/chunghasung>), Mukund Raghothaman (<https://conf.researchr.org/profile/icse-2021/mukundraghothaman>), Chao Wang (<https://conf.researchr.org/profile/icse-2021/chaowang3>)

Pre-print (<https://arxiv.org/abs/2102.06753>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/117/Data-Driven-Synthesis-of-a-Provably-Sound-Side-Channel-Analysis>)

#### ☆ Data-Oriented Differential Testing of Object-Relational Mapping Systems

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Thodoris Sotiropoulos (<https://conf.researchr.org/profile/icse-2021/thodorissotiropoulos>), Stefanos Chaliasos (<https://conf.researchr.org/profile/icse-2021/stefanoschaliasos>), Vaggelis Atlidakis (<https://conf.researchr.org/profile/icse-2021/vaggelisatlidakis>), Dimitris Mitropoulos (<https://conf.researchr.org/profile/icse-2021/dimitrismitropoulos>), Diomidis Spinellis (<https://conf.researchr.org/profile/icse-2021/diomidisspinellis>)

Pre-print (<https://zenodo.org/record/4550429>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/53/Data-Oriented-Differential-Testing-of-Object-Relational-Mapping-Systems>)

#### ☆ DeepBackdoor: Black-box Backdoor Attack on Deep Learning Models through Neural Payload Injection

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Yuanchun Li (<https://conf.researchr.org/profile/icse-2021/yuanchunli1>), Jiayi Hua (<https://conf.researchr.org/profile/icse-2021/jiayihua>), Haoyu Wang (<https://conf.researchr.org/profile/icse-2021/haoyuwang>), Chunyang Chen (<https://conf.researchr.org/profile/icse-2021/chunyangchen1>), Yunxin Liu (<https://conf.researchr.org/profile/icse-2021/yunxinliu>)

Pre-print (<https://arxiv.org/abs/2101.06896>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/2/DeepBackdoor-Black-box-Backdoor-Attack-on-Deep-Learning-Models-through-Neural-Payload>)

#### ☆ DeepLV: Suggesting Log Levels Using Ordinal Based Neural Networks

TECHNICAL TRACK

Zhenhao Li (<https://conf.researchr.org/profile/icse-2021/zhenhaoli>), Heng Li (<https://conf.researchr.org/profile/icse-2021/henglil2>), Tse-Hsun (Peter) Chen (<https://conf.researchr.org/profile/icse-2021/tsehsunpeterchen>), Weiwei Shang (<https://conf.researchr.org/profile/icse-2021/weiyianshang>)

Pre-print ([https://petertsehsun.github.io/papers/DeepLV\\_icse2021.pdf](https://petertsehsun.github.io/papers/DeepLV_icse2021.pdf)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/98/DeepLV-Suggesting-Log-Levels-Using-Ordinal-Based-Neural-Networks>)

#### ☆ DeepLocalize: Fault Localization for Deep Neural Networks

TECHNICAL TRACK

Mohammad Wardat (<https://conf.researchr.org/profile/icse-2021/mohammadwardat>), Wei Le (<https://conf.researchr.org/profile/icse-2021/weile>), Hridesh Rajan (<https://conf.researchr.org/profile/icse-2021/hrideshrajan>)

Pre-print (<https://arxiv.org/pdf/2103.03376.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/1/DeepLocalize-Fault-Localization-for-Deep-Neural-Networks>)

#### ☆ DepOwl: Detecting Dependency Bugs to Prevent Compatibility Failures

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🔗 Pre-print (<https://arxiv.org/abs/2102.08543>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/114/DepOwl-Detecting-Dependency-Bugs-to-Prevent-Compatibility-Failures>)

- ☆ **Distribution-Aware Testing of Neural Networks Using Generative Models**  
Swaroop Dola (<https://conf.researchr.org/profile/icse-2021/swaroopadola>), Matthew B Dwyer (<https://conf.researchr.org/profile/icse-2021/matthewdwyer>), Mary Lou Soffa (<https://conf.researchr.org/profile/icse-2021/marylousoffa>)

🔗 Pre-print (<https://arxiv.org/pdf/2102.13602.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/83/Distribution-Aware-Testing-of-Neural-Networks-Using-Generative-Models>)

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- ☆ **Do you really code? Designing and Evaluating Screening Questions for Online Surveys with Programmers**

Anastasia Danilova (<https://conf.researchr.org/profile/icse-2021/anastasiadanilova>), Alena Naiakshina (<https://conf.researchr.org/profile/icse-2021/alenanaiakshina>), Stefan Horstmann (<https://conf.researchr.org/profile/icse-2021/stefanhorstmann>), Matthew Smith (<https://conf.researchr.org/profile/icse-2021/matthewsmith>)

🔗 Pre-print (<https://arxiv.org/abs/2103.04429>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/89/Do-you-really-code-Designing-and-Evaluating-Screening-Questions-for-Online-Surveys-w>)

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- ☆ **Does mutation testing improve testing practices?**

Goran Petrović (<https://conf.researchr.org/profile/icse-2021/goranpetrovic1>), Marko Ivanković (<https://conf.researchr.org/profile/icse-2021/markoivankovic>), Gordon Fraser (<https://conf.researchr.org/profile/icse-2021/gordonfraser>), René Just (<https://conf.researchr.org/profile/icse-2021/renejust>)

🔗 Pre-print ([https://homes.cs.washington.edu/~rjust/publ/mutation\\_testing\\_practices\\_icse\\_2021.pdf](https://homes.cs.washington.edu/~rjust/publ/mutation_testing_practices_icse_2021.pdf)) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/70/Does-mutation-testing-improve-testing-practices->)

TECHNICAL TRACK

- ☆ **Domain-Specific Fixes for Flaky Tests with Wrong Assumptions on Underdetermined Specifications**

Peilun Zhang (<https://conf.researchr.org/profile/icse-2021/peilunzhang1>), Yanjie Jiang (<https://conf.researchr.org/profile/icse-2021/yanjiejiang>), Anjiang Wei (<https://conf.researchr.org/profile/icse-2021/anjiangwei>), Victoria Stodden (<https://conf.researchr.org/profile/icse-2021/victoriastodden>), Darko Marinov (<https://conf.researchr.org/profile/icse-2021/darkomarinov>), August Shi (<https://conf.researchr.org/profile/icse-2021/augustshi>)

🔗 Pre-print (<http://sites.utexas.edu/august/files/2021/03/ICSE2021.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/84/Domain-Specific-Fixes-for-Flaky-Tests-with-Wrong-Assumptions-on-Underdetermined-Speci>)

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- ☆ **Don't Do That! Hunting Down Visual Design Smells in Complex UIs against Design Guidelines**

Bo Yang (<https://conf.researchr.org/profile/icse-2021/boyang1>), Zhenchang Xing (<https://conf.researchr.org/profile/icse-2021/zhenchangxing>), Xin Xia (<https://conf.researchr.org/profile/icse-2021/xinxia>), Chunyang Chen (<https://conf.researchr.org/profile/icse-2021/chunyangchen1>), Deheng Ye (<https://conf.researchr.org/profile/icse-2021/dehengye>), Shanping Li (<https://conf.researchr.org/profile/icse-2021/shanpingli>)

🔗 Pre-print (<https://xin-xia.github.io/publication/icse213.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/87/Don-t-Do-That-Hunting-Down-Visual-Design-Smells-in-Complex-UIs-against-Design-Guide>)

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- ☆ **Early Life Cycle Software Defect Prediction. Why? How?**

Shrikanth N C (<https://conf.researchr.org/profile/icse-2021/shrikanthnarayanaswamychandrasekaran>), Suvodeep Majumder (<https://conf.researchr.org/profile/icse-2021/suvodeepmajumder>), Tim Menzies (<https://conf.researchr.org/profile/icse-2021/timmenzies>)

🔗 Pre-print (<https://arxiv.org/pdf/2011.13071.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/129/Early-Life-Cycle-Software-Defect-Prediction-Why-How->)

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- ☆ **Efficient Compiler Autotuning via Bayesian Optimization**

Junjie Chen (<https://conf.researchr.org/profile/icse-2021/junjiechen1>), Ningxin Xu (<https://conf.researchr.org/profile/icse-2021/ningxinxu>), Peiqi Chen (<https://conf.researchr.org/profile/icse-2021/peiqiqchen>), Hongyu Zhang (<https://conf.researchr.org/profile/icse-2021/hongyuzhang>)

🔗 Pre-print (<https://drive.google.com/file/d/1uc5d6xn3EUYXWV8VFSdtfZ9eqvTL3k1/view>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/96/Efficient-Compiler-Autotuning-via-Bayesian-Optimization>)

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- ☆ **Enabling Software Resilience in GPGPU Applications via Partial Thread Protection**

Lishan Yang (<https://conf.researchr.org/profile/icse-2021/lishanyang>), Bin Nie (<https://conf.researchr.org/profile/icse-2021/binnie>), Adwait Jog (<https://conf.researchr.org/profile/icse-2021/adwaitjog>), Evgenia Smirni (<https://conf.researchr.org/profile/icse-2021/evgeniasmirni>)

🔗 Pre-print (<https://arxiv.org/abs/2103.02825>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/28/Enabling-Software-Resilience-in-GPGPU-Applications-via-Partial-Thread-Protection>)

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- ☆ **Enhancing Genetic Improvement of Software with Regression Test Selection**

Giovani Guizzo (<https://conf.researchr.org/profile/icse-2021/giovaniguizzo>), Justyna Petke (<https://conf.researchr.org/profile/icse-2021/justynapetke>), Federica Sarro (<https://conf.researchr.org/profile/icse-2021/federicasarro>), Mark Harman (<https://conf.researchr.org/profile/icse-2021/markharman>)

🔗 Pre-print (<https://bit.ly/Guizzo-ICSE-2021>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/6/Enhancing-Genetic-Improvement-of-Software-with-Regression-Test-Selection>)

TECHNICAL TRACK



- ☆ **Evaluating SZZ Implementations Through a Developer-informed Oracle**

Giovanni Rosa (<https://conf.researchr.org/profile/icse-2021/giovanirosa>), Luca Pascarella (<https://conf.researchr.org/profile/icse-2021/lucapascarella1>), Simone Scalabrino (<https://conf.researchr.org/profile/icse-2021/simonescalabrino>), Rosalia Tufano

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🔗 Pre-print (<https://arxiv.org/abs/2102.03300>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/42/Evaluating-SZZ-Implementations-Through-a-Developer-informed-Oracle>)

#### ☆ Evaluating Unit Testing Practices in R Packages

TECHNICAL TRACK

Melina Vidoni (<https://conf.researchr.org/profile/icse-2021/melinavidoni>)

🔗 Pre-print (<https://melvidoni.rbind.io/publication/2021-rttd-icse/>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/5/Evaluating-Unit-Testing-Practices-in-R-Packages>)

#### ☆ EvoSpex: An Evolutionary Algorithm for Learning Postconditions

TECHNICAL TRACK

Facundo Molina (<https://conf.researchr.org/profile/icse-2021/facundomolina>), Pablo Ponzo (<https://conf.researchr.org/profile/icse-2021/pabloponzo>), Nazareno Aguirre (<https://conf.researchr.org/profile/icse-2021/nazarenoaguirre>), Marcelo F. Frias (<https://conf.researchr.org/profile/icse-2021/marcelofrias>)

🔗 Pre-print (<https://arxiv.org/abs/2102.13569>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/134/EvoSpex-An-Evolutionary-Algorithm-for-Learning-Postconditions>)



#### ☆ Extracting Concise Bug-Fixing Patches from Human-Written Patches in Version Control Systems

TECHNICAL TRACK

Yanjie Jiang (<https://conf.researchr.org/profile/icse-2021/yanjiejiang>), Hui Liu (<https://conf.researchr.org/profile/icse-2021/huiliu>), Nan Niu (<https://conf.researchr.org/profile/icse-2021/nanni>), Lu Zhang (<https://conf.researchr.org/profile/icse-2021/luzhang>), Yamin Hu (<https://conf.researchr.org/profile/icse-2021/yaminhu>)

🔗 Pre-print (<https://liuhuigmail.github.io/publishedPapers/ICSE2021.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/137/Extracting-Concise-Bug-Fixing-Patches-from-Human-Written-Patches-in-Version-Control-S>)

#### ☆ Extracting Rationale for Software Development Decisions—A Study of Python Email Archives

TECHNICAL TRACK

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🔗 Pre-print (<https://arxiv.org/abs/2102.05232>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/95/Extracting-Rationale-for-Software-Development-Decisions-A-Study-of-Python-Email-Arch>)

#### ☆ FLACK: Counterexample-Guided Fault Localization for Alloy Models

TECHNICAL TRACK

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🔗 Pre-print (<https://arxiv.org/abs/2102.10152>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/118/FLACK-Counterexample-Guided-Fault-Localization-for-Alloy-Models>)



#### ☆ Fast Outage Analysis of Large-scale Production Clouds with Service Correlation Mining

TECHNICAL TRACK

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🔗 Pre-print (<https://arxiv.org/abs/2103.03649>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/66/Fast-Outage-Analysis-of-Large-scale-Production-Clouds-with-Service-Correlation-Mining>)

#### ☆ Fast Parametric Model Checking through Model Fragmentation

TECHNICAL TRACK

Xinwei Fang (<https://conf.researchr.org/profile/icse-2021/xinweifang>), Radu Calinescu (<https://conf.researchr.org/profile/icse-2021/raducalinescu>), Simos Gerasimou (<https://conf.researchr.org/profile/icse-2021/simosgerasimou>), Faisal Alhwikem (<https://conf.researchr.org/profile/icse-2021/faisalalhwikem>)

🔗 Pre-print (<https://arxiv.org/abs/2102.01490>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/102/Fast-Parametric-Model-Checking-through-Model-Fragmentation>)

#### ☆ Fast and Precise On-the-fly Patch Validation for All

TECHNICAL TRACK

Lingchao Chen (<https://conf.researchr.org/profile/icse-2021/lingchaochen>), Yicheng Ouyang (<https://conf.researchr.org/profile/icse-2021/yichengouyang1>), Lingming Zhang (<https://conf.researchr.org/profile/icse-2021/lingmingzhang>)

🔗 Pre-print (<http://lingming.cs.illinois.edu/publications/icse2021.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/7/Fast-and-Precise-On-the-fly-Patch-Validation-for-All>)

#### ☆ Fault Localization with Code Coverage Representation Learning

TECHNICAL TRACK

Yi Li (<https://conf.researchr.org/profile/icse-2021/yili1>), Shaohua Wang (<https://conf.researchr.org/profile/icse-2021/shaohuawang>), Tien N. Nguyen (<https://conf.researchr.org/profile/icse-2021/tiennnguyen>)

🔗 Pre-print (<https://arxiv.org/pdf/2103.00270.pdf>) 📎 Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/93/Fault-Localization-with-Code-Coverage-Representation-Learning>)

#### ☆ Fine with "1234"? An Analysis of SMS One-Time Password Randomness in Android Apps

TECHNICAL TRACK



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 ☞ Pre-print (<https://github.com/ooyi6/pseudo-random-number-generation-test>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/57/Fine-with-1234-An-Analysis-of-SMS-One-Time-Password-Randomness-in-Android-Apps>)

★ FlakeFlagger: Predicting Flakiness Without Rerunning Tests

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☞ Pre-print (<https://www.jonbell.net/preprint/icse21-flakeflagger.pdf>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/115/FlakeFlagger-Predicting-Flakiness-Without-Rerunning-Tests>)




TECHNICAL TRACK



★ Fuzzing Symbolic Expressions


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☞ Pre-print (<https://arxiv.org/pdf/2102.06580>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/23/Fuzzing-Symbolic-Expressions>)

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★ GUIGAN: Learning to Generate GUI Designs Using Generative Adversarial Networks


Tianming Zhao (<https://conf.researchr.org/profile/icse-2021/tianmingzhao>), Chunyang Chen (<https://conf.researchr.org/profile/icse-2021/chunyangchen1>), Yuanling Liu (<https://conf.researchr.org/profile/icse-2021/yuanlingliu>), Xiaodong Zhu (<https://conf.researchr.org/profile/icse-2021/xiaodongzhu>)

☞ Pre-print (<https://arxiv.org/abs/2101.09978>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/122/GUIGAN-Learning-to-Generate-GUI-Designs-Using-Generative-Adversarial-Networks>)

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★ GenTree: Using Decision Trees to Learn Interactions for Configurable Software

KimHao Nguyen (<https://conf.researchr.org/profile/icse-2021/kimhaonguyen>), ThanhVu Nguyen (<https://conf.researchr.org/profile/icse-2021/thanhvunguyen>)

☞ Pre-print (<https://arxiv.org/abs/2102.06872>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/80/GenTree-Using-Decision-Trees-to-Learn-Interactions-for-Configurable-Software>)





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★ Graph-based Fuzz Testing for Deep Learning Inference Engines


Weisi Luo (<https://conf.researchr.org/profile/icse-2021/weisiluo>), Xiaoyue Run (<https://conf.researchr.org/profile/icse-2021/xiaoyuerun>), Dong Chai (<https://conf.researchr.org/profile/icse-2021/dongchai>), Jiang Wang (<https://conf.researchr.org/profile/icse-2021/jiangwang>), Chunrong Fang (<https://conf.researchr.org/profile/icse-2021/chunrongfang>), Zhenyu Chen (<https://conf.researchr.org/profile/icse-2021/zhenyuchen>)

☞ Pre-print (<https://arxiv.org/abs/2008.05933>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/68/Graph-based-Fuzz-Testing-for-Deep-Learning-Inference-Engines>)  File Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/68/Graph-based-Fuzz-Testing-for-Deep-Learning-Inference-Engines>)

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★ Growing A Test Corpus with Bonsai Fuzzing


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☞ Pre-print (<http://arxiv.org/abs/2103.04388>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/63/Growing-A-Test-Corpus-with-Bonsai-Fuzzing>)

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★ Hero: On the Chaos When PATH Meets Modules

Ying Wang (<https://conf.researchr.org/profile/icse-2021/yingwang>), Liang Qiao (<https://conf.researchr.org/profile/icse-2021/liangqiao>), Chang Xu (<https://conf.researchr.org/profile/icse-2021/changxu>), Yepang Liu (<https://conf.researchr.org/profile/icse-2021/yepangliu>), Shing-Chi Cheung (<https://conf.researchr.org/profile/icse-2021/shingchicheung>), Na Meng (<https://conf.researchr.org/profile/icse-2021/nameng>), Hai Yu (<https://conf.researchr.org/profile/icse-2021/haiyu>), Zhiliang Zhu (<https://conf.researchr.org/profile/icse-2021/zhiliangzhu>)


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★ How Developers Optimize Virtual Reality Applications: A Study of Optimization Commits in Open Source Unity Projects


Fariha Nusrat (<https://conf.researchr.org/profile/icse-2021/farihanusrat>), Foyzul Hassan (<https://conf.researchr.org/profile/icse-2021/foyzulhassan>), Hao Zhong (<https://conf.researchr.org/profile/icse-2021/haozhong>), Xiaoyin Wang (<https://conf.researchr.org/profile/icse-2021/xiaoyinwang>)

☞ Pre-print (<http://xywang.100871.net/VRPerfBugStudyICSE21.pdf>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/100/How-Developers-Optimize-Virtual-Reality-Applications-A-Study-of-Optimization-Commits>)

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★ How Gamification Affects Software Developers: Cautionary Evidence from a Natural Experiment on GitHub

Lukas Moldon (<https://conf.researchr.org/profile/icse-2021/lukasmoldon>), Markus Strohmaier (<https://conf.researchr.org/profile/icse-2021/markusstrohmaier>), Johannes Wachs (<https://conf.researchr.org/profile/icse-2021/johanneswachs>)

☞ Pre-print (<https://arxiv.org/abs/2006.02371>)  Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/100/How-Developers-Optimize-Virtual-Reality-Applications-A-Study-of-Optimization-Commits>)

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#### ☆ How to identify Boundary Conditions with Contrasty Metric?

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Weilin Luo (<https://conf.researchr.org/profile/icse-2021/luowellin>), Hai Wan (<https://conf.researchr.org/profile/icse-2021/haiwan1>), Xiaotong Song (<https://conf.researchr.org/profile/icse-2021/xiaotongsong>), Binhao Yang (<https://conf.researchr.org/profile/icse-2021/binhaoyang>), Hongzhen Zhong (<https://conf.researchr.org/profile/icse-2021/hongzhenzhong>), Yin Chen (<https://conf.researchr.org/profile/icse-2021/yincheng>)

Pre-print (<http://arxiv.org/abs/2103.02384>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/20/How-to-identify-Boundary-Conditions-with-Contrasty-Metric->)

#### ☆ IMGdroid: Detecting Image Loading Defects in Android Applications

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Wei Song (<https://conf.researchr.org/profile/icse-2021/weisong>), Mengqi Han (<https://conf.researchr.org/profile/icse-2021/mengqihan>), Jeff Huang (<https://conf.researchr.org/profile/icse-2021/jeffhuang>)

Link to publication (<https://ieeexplore.ieee.org/document/9402123>) DOI (<https://doi.org/10.1109/ICSE43902.2021.00080>) Pre-print (<https://o2lab.github.io/p/imgdroid.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/27/IMGdroid-Detecting-Image-Loading-Defects-in-Android-Applications>)

#### ☆ IdBench: Evaluating Semantic Representations of Identifier Names in Source Code

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Yaza Wainakh (<https://conf.researchr.org/profile/icse-2021/yazawainakh>), Moiz Rauf (<https://conf.researchr.org/profile/icse-2021/moizrauf>), Michael Pradel (<https://conf.researchr.org/profile/icse-2021/michaelpradel>)

Pre-print ([http://software-lab.org/publications/icse2021\\_IdBench.pdf](http://software-lab.org/publications/icse2021_IdBench.pdf)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/3/IdBench-Evaluating-Semantic-Representations-of-Identifier-Names-in-Source-Code>)

#### ☆ Identifying Key Features from App User Reviews

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Huayao Wu (<https://conf.researchr.org/profile/icse-2021/huayaowu>), Wenjun Deng (<https://conf.researchr.org/profile/icse-2021/wenjundeng>), Xintao Niu (<https://conf.researchr.org/profile/icse-2021/xintaoni1>), Changhai Nie (<https://conf.researchr.org/profile/icse-2021/changhainie1>)

Pre-print (<https://gist.nju.edu.cn/papers/icse2021.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/76/Identifying-Key-Features-from-App-User-Reviews>)

#### ☆ If It's Not Secure, It Should Not Compile: Preventing DOM-Based XSS in Large-Scale Web Development with API Hardening

TECHNICAL TRACK

Pei Wang (<https://conf.researchr.org/profile/icse-2021/peiwang>), Julian Bangert (<https://conf.researchr.org/profile/icse-2021/julianbangert>), Christoph Kern (<https://conf.researchr.org/profile/icse-2021/christophkern>)

Pre-print (<https://research.google/pubs/pub49950/>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/111/If-It-s-Not-Secure-It-Should-Not-Compile-Preventing-DOM-Based-XSS-in-Large-Scale-We>)

#### ☆ Improving Fault Localization by Integrating Value and Predicate Based Causal Inference Techniques

Yigit Kucuk



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(<https://conf.researchr.org/profile/icse-2021/yigitkucuk>), Tim A. D. Henderson (<https://conf.researchr.org/profile/icse-2021/timhenderson>), Andy Podgurski (<https://conf.researchr.org/profile/icse-2021/andypodgurski>)

Pre-print (<https://arxiv.org/abs/2102.06292>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/72/Improving-Fault-Localization-by-Integrating-Value-and-Predicate-Based-Causal-Inferenc>)

#### ☆ InferCode: Self-Supervised Learning of Code Representations by Predicting Subtrees

TECHNICAL TRACK

Nghi D. Q. Bui (<https://conf.researchr.org/profile/icse-2021/nghibui>), Yijun Yu (<https://conf.researchr.org/profile/icse-2021/yijunyu>), Lingxiao Jiang (<https://conf.researchr.org/profile/icse-2021/lingxiaojiang>)

Pre-print ([https://bdqngi.github.io/files/ICSE\\_2021.pdf](https://bdqngi.github.io/files/ICSE_2021.pdf)) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/97/InferCode-Self-Supervised-Learning-of-Code-Representations-by-Predicting-Subtrees>)

#### ☆ Input Algebras

Rahul Gopinath (<https://conf.researchr.org/profile/icse-2021/rahulgopinath>), Hamed Nemati (<https://conf.researchr.org/profile/icse-2021/hamednemati>), Andreas Zeller (<https://conf.researchr.org/profile/icse-2021/andreaszeller>)

Pre-print (<https://publications.cispa.saarland/3208/7/gopinath2021input.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/49/Input-Algebras>)



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#### ☆ Interface Compliance of Inline Assembly: Automatically Check, Patch and Refine

Frédéric Recoules



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Pre-print (<https://arxiv.org/pdf/2102.07485.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/82/Interface-Compliance-of-Inline-Assembly-Automatically-Check-Patch-and-Refine>)

- ★ Interpretation-enabled Software Reuse Detection Based on a Multi-Level Birthmark Model TECHNICAL TRACK  
 Xi Xu (<https://conf.researchr.org/profile/icse-2021/xixu>), Qinghua Zheng (<https://conf.researchr.org/profile/icse-2021/qinghuazheng>), Zheng Yan (<https://conf.researchr.org/profile/icse-2021/zhengyan1>), Ming Fan (<https://conf.researchr.org/profile/icse-2021/mingfan1>), Ang Jia (<https://conf.researchr.org/profile/icse-2021/angjia>), Ting Liu (<https://conf.researchr.org/profile/icse-2021/tingliu>)  
 Pre-print (<https://arxiv.org/abs/2103.10126>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/8/Interpretation-enabled-Software-Reuse-Detection-Based-on-a-Multi-Level-Birthmark-Mode>)

- ★ IoT Bugs and Development Challenges TECHNICAL TRACK  
 Amir Makhshari (<https://conf.researchr.org/profile/icse-2021/amirmakhshari>), Ali Mesbah (<https://conf.researchr.org/profile/icse-2021/alimesbah>)  
 Pre-print (<http://ece.ubc.ca/~amesbah/resources/papers/iot-icse21.pdf>) Media Attached (<https://conf.researchr.org/details/icse-2021/icse-2021-papers/67/IoT-Bugs-and-Development-Challenges>)

- ★ It Takes Two to Tango: Combining Visual and Textual Information for Detecting Duplicate Video-Based Bug Reports TECHNICAL TRACK  
 Nathan Cooper (<https://conf.researchr.org/profile/icse-2021/nathancooper>), Carlos Bernal-Cárdenas (<https://conf.researchr.org/profile/icse-2021/carlosbernalcardenas>), Oscar Chaparro (<https://conf.researchr.org/profile/icse-2021/oscarchaparro>), Kevin Moran (<https://conf.researchr.org/profile/icse-2021/kevinmoran>), Denys Poshyvanyk (<https://conf.researchr.org/profile/icse-2021/denysposhyvanyk>)  
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 Yu Huang (<https://conf.researchr.org/profile/icse-2021/yuhuang>), Denae Ford (<https://conf.researchr.org/profile/icse-2021/denaeford>), Thomas Zimmermann (<https://conf.researchr.org/profile/icse-2021/tomzimmermann>)  
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- ★ MuDelta: Delta-Oriented Mutation Testing at Commit Time TECHNICAL TRACK  
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#### ★ On the Naming of Methods: A Survey of Professional Developers

Reem S. Alsuhaibani (<https://conf.researchr.org/profile/icse-2021/reemalsuhaibani>), Christian D. Newman (<https://conf.researchr.org/profile/icse-2021/christiannewman>), Michael J. Decker (<https://conf.researchr.org/profile/icse-2021/michaeldecker>), Michael L. Collard (<https://conf.researchr.org/profile/icse-2021/michaelcollard>), Jonathan I. Maletic (<https://conf.researchr.org/profile/icse-2021/jonathanmaletic>)

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#### ★ Onboarding vs. Diversity, Productivity and Quality -- Empirical Study of the OpenStack Ecosystem

Armstrong Foundjem (<https://conf.researchr.org/profile/icse-2021/armstrongfoundjem1>), Ellis E. Eghan (<https://conf.researchr.org/profile/icse-2021/elliseeghan>), Bram Adams (<https://conf.researchr.org/profile/icse-2021/bramadams1>)

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#### ★ Operation is the hardest teacher: estimating DNN accuracy looking for mispredictions

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#### ★ Playing Planning Poker in Crowds: Human Computation of Software Effort Estimates

Mohammed Alhamed (<https://conf.researchr.org/profile/icse-2021/mohammedalhamed>), Tim Storer (<https://conf.researchr.org/profile/icse-2021/timstorer>)

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#### ★ Prioritize Crowdsourced Test Reports via Deep Screenshot Understanding

Shengcheng Yu (<https://conf.researchr.org/profile/icse-2021/shengchengyu>), Chunrong Fang (<https://conf.researchr.org/profile/icse-2021/chunrongfang>), Zhenfei Cao (<https://conf.researchr.org/profile/icse-2021/zhenfeicao>), Xu Wang (<https://conf.researchr.org/profile/icse-2021/xuwang2>), Tongyu Li (<https://conf.researchr.org/profile/icse-2021/tongyuli>), Zhenyu Chen (<https://conf.researchr.org/profile/icse-2021/zhenyuchen>)

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#### ★ Prioritizing Test Inputs for Deep Neural Networks via Mutation Analysis

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#### ★ Program Comprehension and Code Complexity Metrics: An fMRI Study

Norman Peitek (<https://conf.researchr.org/profile/icse-2021/normanpeitek>), Sven Apel (<https://conf.researchr.org/profile/icse-2021/svenapel>), Chris Parnin (<https://conf.researchr.org/profile/icse-2021/chrisparnin1>), André Brechmann (<https://conf.researchr.org/profile/icse-2021/andrebrechmann1>), Janet Siegmund (<https://conf.researchr.org/profile/icse-2021/janetsiegmund>)

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#### ★ PyART: Python API Recommendation in Real-Time

Xincheng He (<https://conf.researchr.org/profile/icse-2021/xinchenghe>), Lei Xu (<https://conf.researchr.org/profile/icse-2021/leixu1>), Xiangyu Zhang (<https://conf.researchr.org/profile/icse-2021/xiangyuzhang>), Rui Hao (<https://conf.researchr.org/profile/icse-2021/ruihao>)



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#### ★ PyCG: Practical Call Graph Generation in Python

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#### ★ RAICC: Revealing Atypical Inter-Component Communication in Android Apps

Jordan Samhi (<https://conf.researchr.org/profile/icse-2021/jordansamhi>), Alexandre Bartel (<https://conf.researchr.org/profile/icse-2021/alexandrebartel1>), Tegawendé F. Bissyandé (<https://conf.researchr.org/profile/icse-2021/tegawendefbissyande>), Jacques Klein (<https://conf.researchr.org/profile/icse-2021/jacquesklein>)  
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#### ★ Reducing DNN Properties to Enable Falsification with Adversarial Attacks

David Shriver (<https://conf.researchr.org/profile/icse-2021/davidshriver>), Sebastian Elbaum (<https://conf.researchr.org/profile/icse-2021/sebastianelbaum1>), Matthew B Dwyer (<https://conf.researchr.org/profile/icse-2021/matthewdwyer>)  
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#### ★ Relating Reading, Visualization, and Coding for New Programmers: A Neuroimaging Study

Madeline Endres (<https://conf.researchr.org/profile/icse-2021/madelineendres>), Zachary Karas (<https://conf.researchr.org/profile/icse-2021/zacharykaras>), Xiaosu Hu (<https://conf.researchr.org/profile/icse-2021/xiaosuhu>), Ioulia Kovelman (<https://conf.researchr.org/profile/icse-2021/iouliakovelman>), Westley Weimer (<https://conf.researchr.org/profile/icse-2021/westleyweimer>)  
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#### ★ Representation of Developer Expertise in Open Source Software

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#### ★ Resource-Guided Configuration Space Reduction for Deep Learning Models

Yanjie Gao (<https://conf.researchr.org/profile/icse-2021/yanjiegao>), Yonghao Zhu (<https://conf.researchr.org/profile/icse-2021/yonghaozhu1>), Hongyu Zhang (<https://conf.researchr.org/profile/icse-2021/hongyuzhang>), Haoxiang Lin (<https://conf.researchr.org/profile/icse-2021/haoxianglin1>), Mao Yang (<https://conf.researchr.org/profile/icse-2021/maoyang>)  
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#### ★ Restoring Execution Environments of Jupyter Notebooks

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#### ★ RobOT: Robustness-Oriented Testing for Deep Learning Systems

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- ★ **Same File, Different Changes: The Potential of Meta-Maintenance on GitHub**  
 Hideaki Hata (<https://conf.researchr.org/profile/icse-2021/hideakhata>), Raula Gaikovina Kula (<https://conf.researchr.org/profile/icse-2021/raulakula>), Takashi Ishio (<https://conf.researchr.org/profile/icse-2021/takashiishio>), Christoph Treude (<https://conf.researchr.org/profile/icse-2021/christophotreude>)  
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- ★ **Scalable Quantitative Verification For Deep Neural Networks**  
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- ★ **Seamless Variability Management With the Virtual Platform**  
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- ★ **Self-Checking Deep Neural Networks in Deployment**  
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- ★ **Semantic Patches for Adaptation of JavaScript Programs to Evolving Libraries**  
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- ★ **Semi-supervised Log-based Anomaly Detection via Probabilistic Label Estimation**  
 Lin Yang (<https://conf.researchr.org/profile/icse-2021/linyng1>), Junjie Chen (<https://conf.researchr.org/profile/icse-2021/junjiechen1>), Zan Wang (<https://conf.researchr.org/profile/icse-2021/zanwang>), Weijing Wang (<https://conf.researchr.org/profile/icse-2021/weijingwang1>), Jiajun Jiang (<https://conf.researchr.org/profile/icse-2021/jiajunjiang>), Xuyuan Dong (<https://conf.researchr.org/profile/icse-2021/xuyuandong>), Wenbin Zhang (<https://conf.researchr.org/profile/icse-2021/wenbinzhang>)  
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- ★ **Shipwright: A Human-in-the-Loop System for Dockerfile Repair**  
 Jordan Henkel (<https://conf.researchr.org/profile/icse-2021/jordanhenkel>), Denini Silva (<https://conf.researchr.org/profile/icse-2021/deninisilva>), Leopoldo Teixeira (<https://conf.researchr.org/profile/icse-2021/leopoldoteixeira>), Marcelo d'Amorim (<https://conf.researchr.org/profile/icse-2021/marcelodamorim>), Thomas Reps (<https://conf.researchr.org/profile/icse-2021/thomasreps>)



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#### ★ Siri, Write the Next Method

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#### ★ Smart Contract Security: a Practitioners' Perspective

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#### ★ Supporting Quality Assurance with Automated Process-Centric Quality Constraints Checking

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#### ★ Sustainable Solving: Reducing The Memory Footprint of IFDS-Based Data Flow Analyses Using Intelligent Garbage Collection

Steven Arzt (<https://conf.researchr.org/profile/icse-2021/stevenarzt1>)

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#### ★ Synthesizing Object State Transformers for Dynamic Software Updates

Zelin Zhao (<https://conf.researchr.org/profile/icse-2021/zelinzhao>), Yanyan Jiang (<https://conf.researchr.org/profile/icse-2021/yanyanjiang>), Chang Xu (<https://conf.researchr.org/profile/icse-2021/changxu>), Tianxiao Gu (<https://conf.researchr.org/profile/icse-2021/tianxiaogu>), Xiaoxing Ma (<https://conf.researchr.org/profile/icse-2021/xiaoxingma1>)

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#### ★ Technical Leverage in a Software Ecosystem: Development Opportunities and Security Risks

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#### ★ Testing Machine Translation via Referential Transparency

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★ **The Mind Is a Powerful Place: How Showing Code Comprehensibility Metrics Influences Code Understanding**

Marvin Wyrich (<https://conf.researchr.org/profile/icse-2021/marvinwyrich>), Andreas Preikschat (<https://conf.researchr.org/profile/icse-2021/andreaspreikschat>), Daniel Graziotin (<https://conf.researchr.org/profile/icse-2021/danielgraziotin>), Stefan Wagner (<https://conf.researchr.org/profile/icse-2021/stefanwagner>)

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★ **Trace-Checking CPS Properties: Bridging the Cyber-Physical Gap**

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★ **TransRegex: Multi-modal Regular Expression Synthesis by Generate-and-Repair**

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★ **Unrealizable Cores for Reactive Systems Specifications**

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#### ★ Using Domain-specific Corpora for Improved Handling of Ambiguity in Requirements

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