



Technical Track

ICSE 2021

[About](#) [Program](#) [Accepted Papers](#) [Information for Authors](#) [People Index](#)

[Call for Papers](#)

Call for Papers

ICSE is the premier forum for presenting and discussing the most recent and significant technical research contributions in the field of Software Engineering. We invite high quality submissions of technical research papers describing original and unpublished results of software engineering research. We welcome submissions addressing topics across the full spectrum of Software Engineering including but not limited to:

- **AI and software engineering**
 - Search-based software engineering
 - Machine learning with and for SE
 - Recommender systems
 - Autonomic systems and self adaptation
 - Program synthesis
 - Program repair
- **Testing and analysis**
 - Software testing
 - Program analysis
 - Validation and Verification
 - Fault localization
 - Formal methods
 - Programming languages
- **Empirical software engineering**
 - Mining software repositories
 - Apps and app store Analysis
 - Software ecosystems
 - Qualitative research methods
- **Software evolution**
 - Evolution and maintenance
 - Debugging
 - Program comprehension
 - API design and evolution
 - Configuration management
 - Release engineering and DevOps
 - Software reuse
 - Refactoring
 - Reverse engineering
 - Software visualization
- **Social aspects of software engineering**
 - Human aspects of software engineering

- Human-computer interaction
- Distributed and collaborative software engineering
- Agile methods and software processes
- Software economics
- Crowd-based software engineering
- Ethics in software engineering
- **Requirements, modeling, and design**
 - Requirements Engineering
 - Modeling and Model-Driven Engineering
 - Software Architecture and Design
 - Tools and Environments
 - Variability and product lines
 - Parallel, Distributed, and Concurrent Systems
 - Software services
- **Dependability**
 - Software Security
 - Privacy
 - Reliability and Safety
 - Performance
 - Green and sustainable technologies
 - Embedded / cyber-physical systems
 - Mobile applications

Review Criteria

Each paper submitted to the Technical Track will be evaluated based on the following criteria:

- **Soundness:** The extent to which the paper's contributions are supported by rigorous application of appropriate research methods
- **Significance:** The extent to which the paper's contributions are important with respect to open software engineering challenges
- **Novelty:** The extent to which the contribution is sufficiently original and is clearly explained with respect to the state-of-the-art
- **Verifiability:** The extent to which the paper includes sufficient information to support independent verification or replication of the paper's claimed contributions
- **Presentation:** The extent to which the paper's quality of writing meets the high standards of ICSE, including clear descriptions and explanations, adequate use of the English language, absence of major ambiguity, clearly readable figures and tables, and adherence to the formatting instructions provided below

Reviewers will carefully consider all of these criteria during the review process, and as a result, high-quality papers may vary considerably in their type of contribution. For example, one paper could provide an extensive replication of prior work while another could describe a highly novel approach supported by non-trivial experimentation or empirical analysis.

How to Submit

- All submissions must conform to the ICSE 2021 formatting and submission instructions and must not exceed 10 pages for the main text, inclusive of all figures, tables, appendices, etc. Two more pages containing only references are permitted. All submissions must be in PDF. The page limit is strict, and it will not be possible to purchase additional pages at any point in the process (including after the paper is accepted).
- Submissions must conform to the IEEE formatting instructions IEEE Conference Proceedings Formatting Guidelines (<https://www.ieee.org/conferences/publishing/templates.html>) (title in 24pt font

and full text in 10pt type, LaTeX users must use `\documentclass[10pt,conference]{IEEEtran}` without including the `compsoc` or `compsocconf` options).

- By submitting to the ICSE Technical Track, authors acknowledge that they are aware of and agree to be bound by the ACM Policy and Procedures on Plagiarism (<https://www.acm.org/publications/policies/plagiarism>) and the IEEE Plagiarism FAQ (<https://www.ieee.org/publications/rights/plagiarism/plagiarism-faq.html>). In particular, papers submitted to ICSE 2021 must not have been published elsewhere and must not be under review or submitted for review elsewhere whilst under consideration for ICSE 2021. Contravention of this concurrent submission policy will be deemed a serious breach of scientific ethics, and appropriate action will be taken in all such cases. To check for double submission and plagiarism issues, the chairs reserve the right to (1) share the list of submissions with the PC Chairs of other conferences with overlapping review periods and (2) use external plagiarism detection software, under contract to the ACM or IEEE, to detect violations of these policies.
- The ICSE 2021 Technical Track will employ a double-blind review process. Thus, no submission may reveal its authors' identities. The authors must make every effort to honor the double-blind review process. In particular, the authors' names must be omitted from the submission and references to their prior work should be in the third person. Further advice, guidance, and explanation about the double-blind review process can be found in the Q&A page (<https://conf.researchr.org/track/icse-2021/icse-2021-submitting-to-icse2021--q-a>).
- By submitting to the ICSE Technical Track, authors acknowledge that they conform to the authorship policy of the ACM (<https://www.acm.org/publications/policy-on-authorship>), and the authorship policy of the IEEE (<https://journals.ieeeauthorcenter.ieee.org/become-an-ieee-journal-author/publishing-ethics/definition-of-authorship/>)

Submissions to the Technical Track that meet the above requirements can be made via the Technical Track submission site (<https://icse2021.hotcrp.com> (<https://icse2021.hotcrp.com>)) by the submission deadline. We encourage the authors to upload their paper info early (and can submit the PDF later) to properly enter conflicts for double-blind reviewing.

Any submission that does not comply with these requirements may be desk rejected by the Technical Track PC Chairs without further review. ICSE 2021 is conducting a pilot with a new open source tool, the SIGSOFT Submission Checker (<https://github.com/acmsigsoft/submission-checker>) to check conformance to the formatting and double blind guidelines. You can help us by trying out the tool yourself. If you see valid warnings you'll know how to update your paper; if you identify places for improvement of the tool, please file an issue (or offer a pull request).

Supplementary Material

Authors are requested to adhere to the ICSE 2021 Open Science policies (<https://conf.researchr.org/track/icse-2021/icse-2021-open-science-policies>) to the best of their abilities. To that end supplementary material can be uploaded via the HotCRP site or anonymously linked from the paper submission. Although PC members are not obligated to look at this material, we strongly encourage submitters to use supplementary material to provide access to anonymized code or data, whenever possible. Please carefully review any supplementary material to ensure it conforms to the double-blind policy (described above). For example, code and data repositories may be exported to remove version control history, scrubbed of names in comments and metadata, and anonymously uploaded to a sharing site to support review. One resource that may be helpful in accomplishing this task is this blog post (<https://ineed.coffee/5205/how-to-disclose-data-for-double-blind-review-and-make-it-archived-open-data-upon-acceptance/>).

Upon acceptance, authors have the possibility to separately submit their supplementary material to the ICSE 2021 Artifact Evaluation (<https://conf.researchr.org/track/icse-2021/icse-2021-Artifact-Evaluation>) track, for recognition of artifacts that are reusable, available, replicated or reproduced.

Author Response Period

ICSE 2021 will offer a three day author response period. In this period the authors will have the opportunity to inspect the reviews, and answer to specific questions raised by the program committee. This period is scheduled after all reviews have been completed, and serves to inform the subsequent decision making process. Authors will be able to see the full reviews, including the reviewer scores as part of the author response process.

Withdrawing a Paper

Authors can withdraw their paper at any moment until the final decision has been made, through the paper submission system. Resubmitting a paper to another venue before the final decision has been made without withdrawing from ICSE 2021 first is considered a violation of the concurrent submission policy, and will lead to automatic rejection from ICSE 2021 as well as any other venue adhering to this policy.

Important Dates

- Technical Track Submissions Deadline: 28 August 2020
- Technical Track Author Response Period: 18–20 November 2020
- Technical Track Acceptance Notification: 17 December 2020
- Technical Track Camera Ready: 12 February 2021


Conference Attendance Expectation

If a submission is accepted, at least one author of the paper is required to register for ICSE 2021 and present the paper. The presentation is expected to be delivered in person, unless this is impossible due to travel limitations (related to, e.g., health, visa, or COVID-19 prevention).

Double Blind Frequently Asked Questions

The ICSE 2021 Technical track will adopt a double-blind review process. Further advice, guidance and explanation about the double-blind review process can be found in the Q&A page (<https://conf.researchr.org/track/icse-2021/icse-2021-submitting-to-icse2021--q-a>). This FAQ's is based on guidelines for double-blind reviewing from ASE 2020 (<https://conf.researchr.org/track/ase-2020/ase-2020-papers#FAQs-on-Double-Blind>) and ICSE 2020 (<https://2020.icse-conferences.org/track/icse-2020-papers?track=ICSE%20Technical%20Papers#Submitting-to-ICSE-Q-A>)*.

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://2021.icse-conferences.org/committee/icse-2021-papers-program-committee)		
	Arie van Deursen Delft University of Technology, Netherlands Netherlands	Program Co-Chair

(<https://2021.icse-conferences.org/profile/arievandeursen>)



Tao Xie
Peking University

Program Co-Chair

(<https://2021.icse-conferences.org/profile/taoxie>)



Eric Bodden
Heinz Nixdorf Institut, Paderborn University and Fraunhofer IEM

Area Chair

(<https://2021.icse-conferences.org/profile/ericbodden>)



Daniela Damian
University of Victoria

Canada

Area Chair

(<https://2021.icse-conferences.org/profile/danieladamian>)



Zhi Jin
Peking University

China

Area Chair

(<https://2021.icse-conferences.org/profile/zhijin>)



Anders Møller
Aarhus University

Denmark

Area Chair

(<https://2021.icse-conferences.org/profile/andersmoller>)



Lori Pollock
University of Delaware, USA

United States

Area Chair

(<https://2021.icse-conferences.org/profile/loripollock>)



Dongmei Zhang
Microsoft Research

China

Area Chair

(<https://2021.icse-conferences.org/profile/dongmeizhang>)



Thomas Zimmermann
Microsoft Research

United States

Area Chair

(<https://2021.icse-conferences.org/profile/tomzimmermann>)



Rui Abreu
Faculty of Engineering, University of Porto, Portugal

Portugal

(<https://2021.icse-conferences.org/profile/ruiabreu>)



Georgios Gousios
Facebook & Delft University of Technology

Netherlands

(<https://2021.icse-conferences.org/profile/georgiosgousios>)



Saba Alimadadi
Simon Fraser University

Canada

(<https://2021.icse-conferences.org/profile/sabaalimadadi>)



Andy Zaidman
Delft University of Technology

Netherlands

(<https://2021.icse-conferences.org/profile/andyzaidman>)



Maurício Aniche
Delft University of Technology

Netherlands

(<https://2021.icse-conferences.org/profile/mauricioaniche>)



Wei Yang
University of Texas at Dallas

United States

(<https://2021.icse-conferences.org/profile/weiyang>)



Earl T. Barr
University College London, UK

(<https://2021.icse-conferences.org/profile/earlbarr>)



Paige Rodeghero
Clemson University

United States

(<https://2021.icse-conferences.org/profile/paigerodeghero1>)



Gabriele Bavota
Software Institute, USI Università della Svizzera italiana

Switzerland

(<https://2021.icse-conferences.org/profile/gabrielebavota>)



Yuan Tian
Queens University, Kingston, Canada

Canada

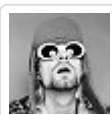
(<https://2021.icse-conferences.org/profile/yuantian>)



Jonathan Bell
Northeastern University

United States

(<https://2021.icse-conferences.org/profile/jonathanbell>)



Tianyin Xu
University of Illinois Urbana-Champaign

(<https://2021.icse-conferences.org/profile/tianyin Xu1>)



Nelly Bencomo
Aston University

United Kingdom

(<https://2021.icse-conferences.org/profile/nellybencomo>)



Hyunsook Do
University of North Texas

United States

(<https://2021.icse-conferences.org/profile/hyunsookdo>)



Thorsten Berger
Chalmers | University of Gothenburg

(<https://2021.icse-conferences.org/profile/thorstenberger>)



Marielle Stoelinga
University of Twente and Radboud University, Nijmegen

Netherlands

(<https://2021.icse-conferences.org/profile/mariellestoelinga>)



Dirk Beyer
LMU Munich, Germany

Germany

(<https://2021.icse-conferences.org/profile/dirkbeyer>)



Filippo Lanubile
University of Bari

Italy

(<https://2021.icse-conferences.org/profile/filippolanubile>)



Cor-Paul Bezemer
University of Alberta

Canada

(<https://2021.icse-conferences.org/profile/corpaulbezemer>)



Stefan Wagner
University of Stuttgart

Germany

(<https://2021.icse-conferences.org/profile/stefanwagner>)



Tegawendé F. Bissyandé
SnT, University of Luxembourg

Luxembourg

(<https://2021.icse-conferences.org/profile/tegawendefbissyande>)



Annibale Panichella
Delft University of Technology

Netherlands

(<https://2021.icse-conferences.org/profile/annibalepanichella>)



Kelly Blincoe
University of Auckland
New Zealand

(<https://2021.icse-conferences.org/profile/kellyblincoe>)



Daniela S. Cruzes
SINTEF

(<https://2021.icse-conferences.org/profile/danielascruzes>)



Anne Etien
Université de Lille, CNRS, Inria, Centrale Lille, UMR 9189 –CRISTAL
France

(<https://2021.icse-conferences.org/profile/anneetien1>)



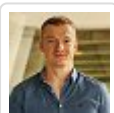
Paulo Borba
Federal University of Pernambuco
Brazil

(<https://2021.icse-conferences.org/profile/pauloborba>)



Sarah Nadi
University of Alberta
Canada

(<https://2021.icse-conferences.org/profile/sarahnadi>)



Marcel Böhme
Monash University, Australia
Australia

(<https://2021.icse-conferences.org/profile/marcelbohme>)



Robyn Lutz
Iowa State University

(<https://2021.icse-conferences.org/profile/robynlutz>)



Yan Cai
Institute of Software, Chinese Academy of Sciences
China

(<https://2021.icse-conferences.org/profile/yancai>)



Qirun Zhang
Georgia Institute of Technology, USA

(<https://2021.icse-conferences.org/profile/qirunzhang>)



Yuanfang Cai
Drexel University
United States

(<https://2021.icse-conferences.org/profile/yuanfangcai>)



Daphne Yao
Virginia Tech

United States

(<https://2021.icse-conferences.org/profile/daphneyao>)



Wing-Kwong Chan
City University of Hong Kong, Hong Kong

China

(<https://2021.icse-conferences.org/profile/wingkwongchan1>)



Jesus M. Gonzalez-Barahona
Universidad Rey Juan Carlos

Spain

(<https://2021.icse-conferences.org/profile/jesusmgonzalezbarahona>)



Zhenyu Chen
Nanjing University

(<https://2021.icse-conferences.org/profile/zhenyuchen>)



Darja Šmite
Blekinge Institute of Technology

(<https://2021.icse-conferences.org/profile/darjasmite>)



Shing-Chi Cheung
Department of Computer Science and Engineering, The Hong Kong University of Science and Technology

(<https://2021.icse-conferences.org/profile/shingchicheung>)



Antonio Ruiz-Cortés
University of Seville

Spain

(<https://2021.icse-conferences.org/profile/antonioruizcortes>)



Olga Baysal
Carleton University

Canada

(<https://2021.icse-conferences.org/profile/olgabaysal>)



Eunjong Choi
Kyoto Institute of Technology

Japan

(<https://2021.icse-conferences.org/profile/eunjongchoi>)



Maria Christakis
MPI-SWS

(<https://2021.icse-conferences.org/profile/mariachristakis>)



Xiaoyuan Xie
School of Computer Science, Wuhan University, China

(<https://2021.icse-conferences.org/profile/xiaoyuanxie>)



Tayana Conte
Universidade Federal do Amazonas
Brazil

(<https://2021.icse-conferences.org/profile/tayanaconte>)



Per Runeson
Lund University
Sweden

(<https://2021.icse-conferences.org/profile/perruneson>)



Fabiano Dalpiaz
Utrecht University
Netherlands

(<https://2021.icse-conferences.org/profile/fabianodalpiaz>)



Maya Daneva
University of Twente
Netherlands

(<https://2021.icse-conferences.org/profile/mayadaneva>)



Yvonne Dittrich
IT University of Copenhagen, Denmark

(<https://2021.icse-conferences.org/profile/yvonnedittrich>)



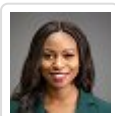
Julian Dolby
IBM Research, USA

(<https://2021.icse-conferences.org/profile/juliandolby>)



Neil Ernst
University of Victoria
Canada

(<https://2021.icse-conferences.org/profile/neilernst>)



Denae Ford
Microsoft Research
United States

(<https://2021.icse-conferences.org/profile/denaeford>)



Thomas Fritz
University of Zurich
Switzerland

(<https://2021.icse-conferences.org/profile/thomasfritz>)



Diego Garbervetsky
University of Buenos Aires and CONICET, Argentina
Argentina

(<https://2021.icse-conferences.org/profile/diegogarbervetsky>)



Joshua Garcia
University of California, Irvine
United States

(<https://2021.icse-conferences.org/profile/joshuagarcia>)



Jaco Geldenhuys
Stellenbosch University

(<https://2021.icse-conferences.org/profile/jacogeldenhuys1>)



Paul Grünbacher
Johannes Kepler University Linz, Austria
Austria

(<https://2021.icse-conferences.org/profile/paulgrunbacher>)



Esther Guerra
Universidad Autonoma de Madrid
Spain

(<https://2021.icse-conferences.org/profile/estherguerra>)



Sonia Haiduc
Florida State University
United States

(<https://2021.icse-conferences.org/profile/soniahaiduc>)



Jennifer Horkoff
Chalmers and the University of Gothenburg
Sweden

(<https://2021.icse-conferences.org/profile/jenniferhorkoff>)



Jeff Huang
Texas A&M University
United States

(<https://2021.icse-conferences.org/profile/jeffhuang>)



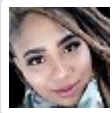
He Jiang
School of Software, Dalian University of Technology
China

(<https://2021.icse-conferences.org/profile/hejiang>)



Yu Jiang
Tsinghua University
China

(<https://2021.icse-conferences.org/profile/yujiang>)



Brittany Johnson
George Mason University

United States

(<https://2021.icse-conferences.org/profile/brittanyjohnson>)



René Just
University of Washington

(<https://2021.icse-conferences.org/profile/renejust>)



Yasutaka Kamei
Kyushu University

Japan

(<https://2021.icse-conferences.org/profile/yasutakakamei>)



Aditya Kanade
Indian Institute of Science, Bangalore

(<https://2021.icse-conferences.org/profile/adityakanade>)



Miryung Kim
University of California at Los Angeles, USA

United States

(<https://2021.icse-conferences.org/profile/miryungkim>)



Moonzoo Kim
KAIST and V+Lab

South Korea

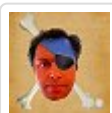
(<https://2021.icse-conferences.org/profile/moonzookim>)



Anne Koziolk
Karlsruhe Institute of Technology

Germany

(<https://2021.icse-conferences.org/profile/annekoziolk>)



Shriram Krishnamurthi
Brown University, United States

(<https://2021.icse-conferences.org/profile/shriramkrishnamurthi>)



Raula Gaikovina Kula
NAIST

Japan

(<https://2021.icse-conferences.org/profile/raulakula>)

☐ **Julia Lawall**
Inria

(<https://2021.icse-conferences.org/profile/julialawall>)



Wei Le
Dept. of Computer Science, Iowa State University

(<https://2021.icse-conferences.org/profile/weile>)



Yves Le Traon
University of Luxembourg, Luxembourg
Luxembourg

(<https://2021.icse-conferences.org/profile/yvesletraon>)



Mario Linares-Vásquez
Universidad de los Andes
Colombia

(<https://2021.icse-conferences.org/profile/mariolinaresvasquez1>)



Xuanzhe Liu
Peking University

(<https://2021.icse-conferences.org/profile/xuanzheliu>)



Yang Liu
Nanyang Technological University

(<https://2021.icse-conferences.org/profile/yangliu>)



Jian-Guang Lou
Microsoft Research
China

(<https://2021.icse-conferences.org/profile/jianguanglou>)



Michael Lyu
The Chinese University of Hong Kong

(<https://2021.icse-conferences.org/profile/michaellyu>)



Xiaoxing Ma
Nanjing University
China

(<https://2021.icse-conferences.org/profile/xiaoxingma>)



Andrian Marcus
University of Texas at Dallas
United States

(<https://2021.icse-conferences.org/profile/andrianmarcus>)



Sabrina Marczak
PUCRS
Brazil

(<https://2021.icse-conferences.org/profile/sabrinamarczak1>)

Shane McIntosh

**University of Waterloo**

Canada

<https://2021.icse-conferences.org/profile/shanemcintosh>**Na Meng****Virginia Tech, USA**<https://2021.icse-conferences.org/profile/nameng>**Ali Mesbah****University of British Columbia (UBC)**

Canada

<https://2021.icse-conferences.org/profile/alimesbah>**Ana Moreira****NOVA University of Lisbon and NOVA LINCS**

Portugal

<https://2021.icse-conferences.org/profile/anamoreira>**Emerson Murphy-Hill****Google**<https://2021.icse-conferences.org/profile/emersonmurphyhill>**Mei Nagappan****University of Waterloo**

Canada

<https://2021.icse-conferences.org/profile/meinagappan>**Maleknaz Nayebi****Polytechnique Montréal**

Canada

<https://2021.icse-conferences.org/profile/maleknaznayebi>**Jianwei Niu****University of Texas at San Antonio**

United States

<https://2021.icse-conferences.org/profile/jianweiniu1>**Nan Niu****University of Cincinnati**

United States

<https://2021.icse-conferences.org/profile/nanniu>**James Noble****Victoria University of Wellington**

New Zealand

<https://2021.icse-conferences.org/profile/jamesnoble>**Nicole Novielli**

**University of Bari**

Italy

<https://2021.icse-conferences.org/profile/nicolenovielli>**Hakjoo Oh****Korea University**<https://2021.icse-conferences.org/profile/hakjoooh>**Rocco Oliveto****University of Molise**<https://2021.icse-conferences.org/profile/roccooliveto>**Chris Parnin****North Carolina State University**<https://2021.icse-conferences.org/profile/chrisparnin1>**Liliana Pasquale****University College Dublin & Lero**

Ireland

<https://2021.icse-conferences.org/profile/lilianapasquale>**Xin Peng****Fudan University, China**

China

<https://2021.icse-conferences.org/profile/xinpeng>**Dietmar Pfahl****University of Tartu**

Estonia

<https://2021.icse-conferences.org/profile/dietmarpfahl>**Martin Pinzger****Alpen-Adria-Universität Klagenfurt**

Austria

<https://2021.icse-conferences.org/profile/martinpinzger>**Michael Pradel****University of Stuttgart**<https://2021.icse-conferences.org/profile/michaelpradel>**Mukul Prasad****Fujitsu Laboratories of America**

United States

<https://2021.icse-conferences.org/profile/mukulprasad>**Paul Ralph**

**Dalhousie University**

Canada

<https://2021.icse-conferences.org/profile/paulralph>**Baishakhi Ray****Columbia University, USA**

United States

<https://2021.icse-conferences.org/profile/baishakhiray>**Peter Rigby****Concordia University, Montreal, Canada**

Canada

<https://2021.icse-conferences.org/profile/peterrigby>**Abhik Roychoudhury****National University of Singapore**

Singapore

<https://2021.icse-conferences.org/profile/abhikroychoudhury>**Julia Rubin****University of British Columbia, Canada**

Canada

<https://2021.icse-conferences.org/profile/juliarubin>**Cindy Rubio-González****University of California, Davis**

United States

<https://2021.icse-conferences.org/profile/cindyrubiogonzalez>**Guenther Ruhe****University of Calgary**

Canada

<https://2021.icse-conferences.org/profile/guentherruhe>**Barbara Russo****Free University of Bolzano**

Italy

<https://2021.icse-conferences.org/profile/barbararusso>**Sukyoung Ryu****KAIST**

South Korea

<https://2021.icse-conferences.org/profile/sukyoungryu>**Mehrdad Sabetzadeh****EECS, University of Ottawa**<https://2021.icse-conferences.org/profile/mehrdadsabetzadeh>**Anita Sarma**

**Oregon State University**

(<https://2021.icse-conferences.org/profile/anitasarma>)

**Weiyi Shang**
Concordia University

(<https://2021.icse-conferences.org/profile/weiyianshang>)

**Kathryn Stolee**
North Carolina State University
United States

(<https://2021.icse-conferences.org/profile/kathrynstolee>)

**Yulei Sui**
University of Technology Sydney

(<https://2021.icse-conferences.org/profile/yuleisui>)

**Jun Sun**
Singapore Management University, Singapore

(<https://2021.icse-conferences.org/profile/junsun>)

**Kla Tantithamthavorn**
Monash University
Australia

(<https://2021.icse-conferences.org/profile/chakkrittantithamthavorn>)

**Paolo Tonella**
USI Lugano, Switzerland
Switzerland

(<https://2021.icse-conferences.org/profile/paolotonella>)

**Rachel Tzoref-Brill**
IBM Research
Israel

(<https://2021.icse-conferences.org/profile/racheltzorefbrill>)

**Marco Tulio Valente**
Federal University of Minas Gerais, Brazil

(<https://2021.icse-conferences.org/profile/marcotuliovalente>)

**Xiaoyin Wang**
University of Texas at San Antonio

(<https://2021.icse-conferences.org/profile/xiaoyinwang>)

Michael Whalen

**University of Minnesota, USA**

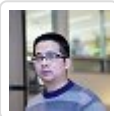
United States

<https://2021.icse-conferences.org/profile/michaelwhalen>**Dinghao Wu****Pennsylvania State University**

United States

<https://2021.icse-conferences.org/profile/dinghaowu1>**Andrzej Wąsowski****IT University of Copenhagen, Denmark**

Denmark

<https://2021.icse-conferences.org/profile/andrzejwasowski>**Xin Xia****Huawei Software Engineering Application Technology Lab**

China

<https://2021.icse-conferences.org/profile/xinxia>**Xusheng Xiao****Case Western Reserve University**<https://2021.icse-conferences.org/profile/xushengxiao1>**Zhenchang Xing****Australian National University**

Australia

<https://2021.icse-conferences.org/profile/zhenchangxing>**Yingfei Xiong****Peking University**<https://2021.icse-conferences.org/profile/yingfeixiong>**Lihua Xu****New York University Shanghai**<https://2021.icse-conferences.org/profile/lihuaxu1>**Jingling Xue****UNSW Sydney**

Australia

<https://2021.icse-conferences.org/profile/jinglingxue>**Tuba Yavuz****University of Florida**

United States

<https://2021.icse-conferences.org/profile/tubayavuz>**Jooyong Yi**

**UNIST (Ulsan National Institute of Science and Technology)**

South Korea

<https://2021.icse-conferences.org/profile/jooyongyi>**Tingting Yu****University of Kentucky**

United States

<https://2021.icse-conferences.org/profile/tingtingyu>**Tao Yue****Simula Research Laboratory**

Norway

<https://2021.icse-conferences.org/profile/taoyue>**Andreas Zeller****CISPA Helmholtz Center for Information Security**

Germany

<https://2021.icse-conferences.org/profile/andreaszeller>**Hongyu Zhang****The University of Newcastle**<https://2021.icse-conferences.org/profile/hongyuzhang>**Sai Zhang****Google Cloud**<https://2021.icse-conferences.org/profile/saizhang>**Jianjun Zhao****Kyushu University**

Japan

<https://2021.icse-conferences.org/profile/jianjunzhao>**Marcelo d'Amorim****Federal University of Pernambuco**

Brazil

<https://2021.icse-conferences.org/profile/marcelodamorim>**Myra Cohen****Iowa State University**

United States

<https://2021.icse-conferences.org/profile/myracohen>**Stephanie Forrest****Arizona State University**<https://2021.icse-conferences.org/profile/stephanieforrest>**Shi Han**

**Microsoft Research Asia**

China

<https://2021.icse-conferences.org/profile/shihan1>**Paola Inverardi****University of L'Aquila**

Italy

<https://2021.icse-conferences.org/profile/paolainverardi>**Raghavan Komondoor****Indian Institute of Science, Bangalore**

India

<https://2021.icse-conferences.org/profile/raghavankomondoor>**Heather Miller****Carnegie Mellon University, USA**<https://2021.icse-conferences.org/profile/heathermiller>**Diptikalyan Saha****IBM Research India**

India

<https://2021.icse-conferences.org/profile/diptikalyansaha>**Bonita Sharif****University of Nebraska-Lincoln, USA**

United States

<https://2021.icse-conferences.org/profile/bonitasharif>**Helen Sharp****The Open University**

United Kingdom

<https://2021.icse-conferences.org/profile/helensharp>**Pei Wang****Google**<https://2021.icse-conferences.org/profile/peiwang>**Minhui (Jason) Xue****The University of Adelaide**

Australia

<https://2021.icse-conferences.org/profile/jasonxue1>**Ye Yang****Stevens institute of technology**<https://2021.icse-conferences.org/profile/yeyang>

Additional Reviewers (<https://2021.icse-conferences.org/committee/icse-2021-papers-additional-reviewers>)



Faridah Akinotcho
University of British Columbia, Canada

(<https://2021.icse-conferences.org/profile/faridahakinotcho>)



Nicolas Anquetil
University of Lille, Lille, France
France

(<https://2021.icse-conferences.org/profile/nicolasanquetil>)



Imran Ashraf
City University of Hong Kong

(<https://2021.icse-conferences.org/profile/imranashraf>)



Jia-Ju Bai
Tsinghua University

(<https://2021.icse-conferences.org/profile/jiajubai>)



Jorge Barreiros
Instituto Superior de Engenharia de Coimbra

(<https://2021.icse-conferences.org/profile/jorgebarreiros>)



Amir Bavand
Concordia University

(<https://2021.icse-conferences.org/profile/amirbavand>)



Beatriz Bernárdez
Universidad de Sevilla
Spain

(<https://2021.icse-conferences.org/profile/beatrizbernardezjimenez>)



Maik Betka
University of Stuttgart

(<https://2021.icse-conferences.org/profile/maikbetka>)



Carolin Brandt
Delft University of Technology
Netherlands

(<https://2021.icse-conferences.org/profile/carolinbrandt>)



Nimrod Busany
Tel Aviv University
Israel

(<https://2021.icse-conferences.org/profile/nimrodbusany>)



Michael Cao
University of British Columbia, Vancouver, Canada

(<https://2021.icse-conferences.org/profile/michaelcao>)



Lingwei Chen
Penn State University

(<https://2021.icse-conferences.org/profile/lingweichen>)



Simin Chen
UT Dallas

(<https://2021.icse-conferences.org/profile/siminchen2>)



Yongheng Chen
Georgia Tech

(<https://2021.icse-conferences.org/profile/yonghengchen>)



Kevin Chow
University of British Columbia

(<https://2021.icse-conferences.org/profile/kevinchow>)



Steven Costiou
INRIA Lille
France

(<https://2021.icse-conferences.org/profile/stevencostiou>)



Nadia Daoudi
University of Luxembourg

(<https://2021.icse-conferences.org/profile/nadiadaoudi>)



Xavier Devroey
Delft University of Technology
Netherlands

(<https://2021.icse-conferences.org/profile/xavierdevroey>)



Shuo Ding
Georgia Institute of Technology, USA

(<https://2021.icse-conferences.org/profile/shuoding>)



Zeming Dong
Kyushu University
Japan

(<https://2021.icse-conferences.org/profile/zemingdong>)



Pengcheng Fang
Case Western Reserve University

(<https://2021.icse-conferences.org/profile/pengchengfang>)



Juan Manuel Florez
University of Texas at Dallas

(<https://2021.icse-conferences.org/profile/juanmanuelflorez1>)



Veit Frick
Alpen-Adria-Universität Klagenfurt

(<https://2021.icse-conferences.org/profile/veitfrick>)



Jonas Fritsch
University of Stuttgart, Institute of Software Engineering
Germany

(<https://2021.icse-conferences.org/profile/jonasfritsch>)



Jun Gao
University of Luxembourg, Luxembourg
China

(<https://2021.icse-conferences.org/profile/jungao>)



José María García
Universidad de Sevilla
Spain

(<https://2021.icse-conferences.org/profile/josemariagarcia>)



Ali Ghanbari
Iowa State University
United States

(<https://2021.icse-conferences.org/profile/alighanbari>)



Miguel Goulao
NOVA University of Lisbon

(<https://2021.icse-conferences.org/profile/miguelgoulao2>)



Catarina Gralha
NOVA University of Lisbon

(<https://2021.icse-conferences.org/profile/catarinagralha1>)



Hamideh Hajiabadi
Karlsruhe Institute of Technology

(<https://2021.icse-conferences.org/profile/hamidehhajiabadi>)

Mirazul Haque

**UT Dallas**

(<https://2021.icse-conferences.org/profile/mirazulhaque>)

**Bo Jiang**
Beihang University

China

(<https://2021.icse-conferences.org/profile/bojiang>)

**Justin Middleton**
North Carolina State University

(<https://2021.icse-conferences.org/profile/justinmiddleton>)

**Abdoul Kader Kaboré**
University of Luxembourg

(<https://2021.icse-conferences.org/profile/abdoulkaderkabore>)

**Jan Keim**
Karlsruhe Institute of Technology (KIT)
Germany

(<https://2021.icse-conferences.org/profile/jankeim>)

**Seyedehzahra Khoshmanesh**
Iowa State University

(<https://2021.icse-conferences.org/profile/seyedehzahrakhoshmanesh>)

**Yves Kirschner**
Karlsruhe Institute of Technology

(<https://2021.icse-conferences.org/profile/yveskirschner>)

**Pingfan Kong**
University of Luxembourg, Luxembourg

(<https://2021.icse-conferences.org/profile/pingfankong1>)

**Anil Koyuncu**
SNT, University of Luxembourg

(<https://2021.icse-conferences.org/profile/anilkoyuncu>)

**Ahcheong Lee**
KAIST

(<https://2021.icse-conferences.org/profile/ahcheonglee1>)

Nakwon Lee

**KAIST**

(<https://2021.icse-conferences.org/profile/nakwonlee>)

**Xiaoting Li**
Penn State University

(<https://2021.icse-conferences.org/profile/xiaotingli>)

**Yuanbo Li**
Georgia Institute of Technology, USA

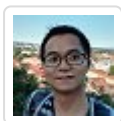
(<https://2021.icse-conferences.org/profile/yuanboli1>)

**Alexander Lill**
University of Zurich

(<https://2021.icse-conferences.org/profile/alexanderlill>)

**Changlin Liu**
Case Western Reserve University

(<https://2021.icse-conferences.org/profile/changlinliu>)

**Kui Liu**
Nanjing University of Aeronautics and Astronautics, China
China

(<https://2021.icse-conferences.org/profile/kuiliu2>)

**Yepang Liu**
Southern University of Science and Technology, China

(<https://2021.icse-conferences.org/profile/yepangliu>)

**Yin Lok Ho**
City University of Hong Kong

(<https://2021.icse-conferences.org/profile/yinlokho>)

**Deyun Lyu**
Kyushu university

(<https://2021.icse-conferences.org/profile/deyunlyu>)

**Xiaoxue Ma**
City University of Hong Kong

(<https://2021.icse-conferences.org/profile/xiaoxuema>)

Christian Macho
University of Klagenfurt



Austria

<https://2021.icse-conferences.org/profile/christianmacho>**Kaushik Madala****University of North Texas**

United States

<https://2021.icse-conferences.org/profile/kaushikmadala1>**Karin Maria Hodnigg****University of Klagenfurt**<https://2021.icse-conferences.org/profile/karinmariahodnigg>**Alberto Martin-Lopez****Universidad de Sevilla**

Spain

<https://2021.icse-conferences.org/profile/albertomartinlopez>**George Mathew****North Carolina State University, USA**<https://2021.icse-conferences.org/profile/georgemathew>**Manar Mazkatli****Karlsruhe Institute of Technology**<https://2021.icse-conferences.org/profile/manarmazkatli>**João Eduardo Montandon****Universidade Federal de Minas Gerais (UFMG)**

Brazil

<https://2021.icse-conferences.org/profile/joaoeduardomontandon>**Ana Moreira****NOVA University of Lisbon and NOVA LINCS**

Portugal

<https://2021.icse-conferences.org/profile/anamoreira>**Tim Nelson****Brown University**

United States

<https://2021.icse-conferences.org/profile/timnelson>**José Antonio Parejo Maestre****Universidad de Sevilla**<https://2021.icse-conferences.org/profile/joseantonioparejomaestre>**Ernest Pobee**

**City University of Hong Kong**

(<https://2021.icse-conferences.org/profile/ernestpobe>)

**Rupesh Prajapati**
Penn State University

(<https://2021.icse-conferences.org/profile/rupesthprajapati>)

**Xu Qinghua**
Simula Research Laboratory

(<https://2021.icse-conferences.org/profile/xuqinghua>)

**Orna Raz**
IBM Research

(<https://2021.icse-conferences.org/profile/omaraz>)

**Manuel Resinas**
Universidad de Sevilla
Spain

(<https://2021.icse-conferences.org/profile/manuelresinas>)

**Roy Rutishauser**
University of Zurich

(<https://2021.icse-conferences.org/profile/royrutishauser>)

**Anastasia Ruvimova**
University of Zurich

(<https://2021.icse-conferences.org/profile/anastasiaruvimova>)

**Jordan Samhi**
University of Luxembourg
Luxembourg

(<https://2021.icse-conferences.org/profile/jordansamhi>)

**Timur Sağlam**
Karlsruhe Institute of Technology

(<https://2021.icse-conferences.org/profile/timursaglam>)

**Larissa Schmid**
Karlsruhe Institute of Technology

(<https://2021.icse-conferences.org/profile/larissaschmid>)

Robert Sebastian Herlim

**KAIST**

(<https://2021.icse-conferences.org/profile/robertsebastianherlim1>)

**Fei Shao**

Case Western Reserve University

(<https://2021.icse-conferences.org/profile/feishao>)

**Snigdha Singh**

Karlsruhe Institute of Technology

(<https://2021.icse-conferences.org/profile/snigdhasingh>)

**Zihe Song**

University of Texas at Dallas

United States

(<https://2021.icse-conferences.org/profile/zihesong>)

**Simone Spiegler**

University of Stuttgart

(<https://2021.icse-conferences.org/profile/simonespiegler>)

**Yongqiang TIAN**

The Hong Kong University of Science and Technology; University of Waterloo

(<https://2021.icse-conferences.org/profile/yongqiangtian>)

**Valerio Terragni**

University of Auckland

(<https://2021.icse-conferences.org/profile/valerioterragni1>)

**Massimo Tivoli**

University of L'Aquila

Italy

(<https://2021.icse-conferences.org/profile/massimotivoli>)

**Haipeng Wang**

City University of Hong Kong

(<https://2021.icse-conferences.org/profile/haipengwang>)

**Peipei Wang**

North Carolina State University, USA

(<https://2021.icse-conferences.org/profile/peipeiawang>)

Ying Wang

**Northeastern University, China**

(<https://2021.icse-conferences.org/profile/yingwang>)

**Zihao Wang**
Penn State University

(<https://2021.icse-conferences.org/profile/zihaoawang2>)

**Lili Wei**
The Hong Kong University of Science and Technology

(<https://2021.icse-conferences.org/profile/liliwei1>)

**Zhengyuan Wei**
City University of Hong Kong, Hong Kong

(<https://2021.icse-conferences.org/profile/zhengyuanwei>)

**Ming Wen**
Huazhong University of Science and Technology, China
China

(<https://2021.icse-conferences.org/profile/mingwen>)

**Dominik Werle**
Karlsruhe Institute of Technology

(<https://2021.icse-conferences.org/profile/dominikwerle>)

**Shao Yang**
Case Western Reserve University

(<https://2021.icse-conferences.org/profile/shaoyang>)

**Zidong Yang**
KAIST

(<https://2021.icse-conferences.org/profile/zidongyang1>)

**Hao Zhang**
City University of Hong Kong

(<https://2021.icse-conferences.org/profile/haozhang>)

**Rui Zhong**
Penn State University

(<https://2021.icse-conferences.org/profile/ruizhong>)

Shihao Zhu**State Key Laboratory of Computer Science, Institute of Software, Chinese Academy of Sciences, China**



(<https://2021.icse-conferences.org/profile/shihaozhu>)