

# **2022 IEEE/ACM 15th International Workshop on Search-Based Software Testing (SBST 2022)**

**Pittsburgh, Pennsylvania, USA  
9 May 2022**



IEEE Catalog Number: CFP22C58-POD  
ISBN: 978-1-6654-6234-1

**Copyright © 2022, Association for Computing Machinery  
All Rights Reserved**

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22C58-POD
ISBN (Print-On-Demand):	978-1-6654-6234-1
ISBN (Online):	978-1-4503-9318-8

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# The 15th Search-Based Software Testing Workshop **SBST 2022**

## Table of Contents

Message from the SBST 2022 Program Chairs .....	vii
SBST 2022 Organizing Committee .....	viii
SBST 2022 Program Committee .....	x

## Research Track

Wasserstein Generative Adversarial Networks for Online Test Generation for Cyber Physical Systems .....	1
<i>Jarkko Peltomäki (Åbo Akademi University, Finland), Frankie Spencer (Åbo Akademi University, Finland), and Ivan Porres (Åbo Akademi University, Finland)</i>	
A Comparative Evaluation on the Quality of Manual and Automatic Test Case Generation Techniques for Scientific Software — A Case Study of a Python Project for Material Science Workflows .....	6
<i>Daniel Trübenbach (Humboldt-Universität zu Berlin, Germany), Sebastian Müller (Humboldt-Universität zu Berlin, Germany), and Lars Grunske (Humboldt-Universität zu Berlin, Germany)</i>	
Towards Run-Time Search for Real-World Multi-Agent Systems .....	14
<i>Abigail C. Diller (Grand Valley State University, USA) and Erik M. Fredericks (Grand Valley State University, USA)</i>	
Learning to Rank for Test Case Prioritization .....	16
<i>Safa Omri (Karlsruhe Institute of Technology (KIT), Germany) and Carsten Sinz (Karlsruhe Institute of Technology (KIT), Germany)</i>	

## Tool Competition

SBST Tool Competition 2022 .....	25
<i>Alessio Gambi (University of Passau, Germany), Gunel Jahangirova (Software Institute - USI, Switzerland), Vincenzo Riccio (Software Institute - USI, Switzerland), and Fiorella Zampetti (University of Sannio, Italy)</i>	
EvoSuite at the SBST 2022 Tool Competition .....	33
<i>Sebastian Schweikl (University of Passau, Germany), Gordon Fraser (University of Passau, Germany), and Andrea Arcuri (Kristiania University College and Oslo Metropolitan University, Germany)</i>	

Kex at the 2022 SBST Tool Competition .....	35
<i>Azat Abdullin (JetBrains Research, Russia), Marat Akhin (JetBrains Research, Russia), and Mikhail Belyaev (JetBrains Research, Russia)</i>	
Basic Block Coverage for Unit Test Generation at the SBST 2022 Tool Competition .....	37
<i>Pouria Derakhshanfar (Delft University of Technology, Netherlands) and Xavier Devroey (University of Namur, Belgium)</i>	
UTBot Java at the SBST2022 Tool Competition .....	39
<i>Dmitry Ivanov (Huawei Research, Russia), Alexey Menshutin (Huawei Research, Russia), Denis Fokin (Huawei Research, Russia), Yury Kamenev (Huawei Research, Russia), Sergey Pospelov (Huawei Research, Russia), Egor Kulikov (Huawei Research, Russia), and Nikita Stroganov (Huawei Research, Russia)</i>	
AdaFrenetic at the SBST 2022 Tool Competition .....	41
<i>Songyang Yan (Xi'an Jiaotong University, China) and Ming Fan (Xi'an Jiaotong University, China)</i>	
AmbieGen Tool at the SBST 2022 Tool Competition .....	43
<i>Dmytro Humeniuk (Polytechnique Montréal, Canada), Giuliano Antoniol (Polytechnique Montréal, Canada), and Foutse Khomh (Polytechnique Montréal, Canada)</i>	
FreneticV at the SBST 2022 Tool Competition .....	47
<i>Ezequiel Castellano (National Institute of Informatics, Japan), Stefan Klikovits (National Institute of Informatics, Japan), Ahmet Cetinkaya (National Institute of Informatics, Japan), and Paolo Arcaini (National Institute of Informatics, Japan)</i>	
GenRL at the SBST 2022 Tool Competition .....	49
<i>Luigi Libero Lucio Starace (Università degli Studi di Napoli Federico II, Italy), Andrea Romdhana (Università degli Studi di Genova, Italy), and Sergio Di Martino (Università degli Studi di Napoli Federico II, Italy)</i>	
EvoMBT at the SBST 2022 Tool Competition .....	51
<i>Raihana Ferdous (Fondazione Bruno Kessler, Italy), Chia-kang Hung (Fondazione Bruno Kessler, Italy), Fitsum Kifetew (Fondazione Bruno Kessler, Italy), Davide Prandi (Fondazione Bruno Kessler, Italy), and Angelo Susi (Fondazione Bruno Kessler, Italy)</i>	
WOGAN at the SBST 2022 CPS Tool Competition .....	53
<i>Jarkko Peltomäki (Åbo Akademi University, Finland), Frankie Spencer (Åbo Akademi University, Finland), and Ivan Porres (Åbo Akademi University, Finland)</i>	
<b>Author Index .....</b>	<b>55</b>