# **2020 Ivannikov Memorial** Workshop (IVMEM 2020)

### Orel, Russia 25 – 26 September 2020



IEEE Catalog Number: CFP20Q02-POD **ISBN:** 

978-1-7281-9089-1

## Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

*Copyright and Reprint Permissions*: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. 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:	CFP20Q02-POD
ISBN (Print-On-Demand):	978-1-7281-9089-1
ISBN (Online):	978-1-7281-9088-4

#### 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 Web: www.proceedings.com



### 2020 Ivannikov Memorial Workshop (IVMEM) **IVMEM 2020**

### **Table of Contents**

Conference Organization .vii Program Committee .viii	
2020 Ivannikov Memorial Workshop	
BinSide : Static Analysis Framework for Defects Detection in Binary Code .3 Hayk Aslanyan (Russian-Armenian University), Mariam Arutunian (Russian-Armenian University), Grigor Keropyan (Yerevan State University), Shamil Kurmangaleev (ISPRAS), and Vahagn Vardanyan (Russian-Armenian University)	
Adaptation of the TOSCA Standard Model for the Kubernetes Container Environment .9 Alexandra Borisova (Ivannikov Institute for System Programming of the RAS, Higher School of Economics), Valeriya Shvetcova (Ivannikov Institute for System Programming of the RAS), and Oleg Borisenko (Ivannikov Institute for System Programming of the RAS)	
Evaluation of Thread-Local Garbage Collection .15 Alexander Filatov (Novosibirsk State University) and Vitaly Mikheev (Huawei Novosibirsk Research Center)	
High Energy Physics Data Popularity : ATLAS Datasets Popularity Case Study .22 Maria Grigorieva (Lomonosov Moscow State University), Eugeny Tretyakov (National Research Nuclear University "MEPhI"), Alexei Klimentov (Brookhaven National Laborator), Dmitry Golubkov (Institute for High Energy Physics of NRC Kurchatov Institute), Tatiana Korchuganova (Universidad Andrés Bello), Aleksandr Alekseev (Universidad Andrés Bello), Alexey Artamonov (National Research Nuclear University "MEPhI"), and Timofei Galkin (National Research Nuclear University "MEPhI")	
Estimation of Watermark Embedding Capacity with Line Space Shifting .29 Alexander V. Kozachok (Academy of the Federal Guard Service of the Russian Federation) and Sergey Kopylov (Academy of the Federal Guard Service of the Russian Federation)	
ARPA: Armenian Paraphrase Detection Corpus and Models .35 Arthur Malajyan (Russian-Armenian University), Karen Avetisyan (Russian-Armenian University), and Tsolak Ghukasyan (Russian-Armenian University)	
Possibilities of Computer Lexicography in Compiling Highly Specialized Terminological Printed and Electronic Dictionaries (Field of Aviation Engineering) .40 Viktoriia Ryzhkova (National Aerospace University "KhAI")	

Three-Step Algorithms for Detection of High Degree Nodes in Online Social Networks .43 Danil Shaikhelislamov (Moscow Institute of Physics and Technology), Mikhail Drobyshevskiy (ISPRAS), Denis Turdakov (Ivannikov Institute for System Programming of the Russian Academy of Sciences), Alexander Yatskov (Ivannikov Institute for System Programming of the Russian Academy of Sciences), Maksim Varlamov (Ivannikov Institute for System Programming of the Russian Academy of Sciences), and Denis Aivazov (Moscow Institute of Physics and Technology)
A State-Based Refinement Technique for Event-B .49. Alexey Khoroshilov (ISP RAS, NRU Higher School of Economics, Lomonosov Moscow State University, Moscow Institute of Physics and Technology), Victor Kuliamin (ISP RAS, NRU Higher School of Economics, Lomonosov Moscow State University), Alexander K. Petrenko (ISP RAS, NRU Higher School of Economics, Lomonosov Moscow State University), and Ilya Shchepetkov (ISP RAS)
Classification of Pseudo-Random Sequences Based on the Random Forest Algorithm .55 Alexander V. Kozachok (Academy of the Federal Guard Service of the Russian Federation), Andrey A. Spirin (Academy of the Federal Guard Service of the Russian Federation), Alexander I. Kozachok (Academy of the Federal Guard Service of the Russian Federation), and Alexey N. Tsibulia (Academy of the Federal Guard Service of the Russian Federation)
Architecture and Deployment Details of Scalable Jupyter Environment at Kurchatov Institute Supercomputing Centre .59 Anton Teslyuk (NRC Kurchatov Institute), Sergey Bobkov (NRC Kurchatov Institute), Alexander Belyaev (NRC Kurchatov Institute), Alexander Filippov (NRC Kurchatov Institute), Kirill Izotov (NRC Kurchatov Institute), Ilya Lyalin (NRC Kurchatov Institute), Andrey Shitov (NRC Kurchatov Institute), Leonid Yasnopolsky (NRC Kurchatov Institute), and Vasily Velikhov (NRC Kurchatov Institute)
Compact Interface Method Table Layout .62 Ivan Trepakov (Novosibirsk State University) and Pavel Pavlov (Huawei Novosibirsk Research Center)
Verifying Cryptographic Protocols by Tamarin Prover .69. Evgenii Vinarskii (Ivannikov Institute for System Programming of the RAS, Lomonosov Moscow State University), Alexey Demakov (Ivannikov Institute for System Programming of the RAS), Alexander Kamkin (Ivannikov Institute for System Programming of the RAS, Lomonosov Moscow State University, Moscow Institute of Physics and Technology, Higher School of Economics), and Nina Yevtushenko (Ivannikov Institute for System Programming of the RAS, Higher School of Economics)
Determining Soil Parameters .76. Sergey Zasukhin (Moscow Institute of Physics and Technology) and Elena Zasukhina (FRC "Computer Science and Control" of RAS)

Author Index 83