

2019 IEEE/ACM Innovating the Network for Data-Intensive Science (INDIS 2019)

**Denver, Colorado, USA
17 November 2019**



**IEEE Catalog Number: CFP19S70-POD
ISBN: 978-1-7281-5974-4**

**Copyright © 2019 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:	CFP19S70-POD
ISBN (Print-On-Demand):	978-1-7281-5974-4
ISBN (Online):	978-1-7281-6666-7

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

CURRAN ASSOCIATES INC.
proceedings
.com

2019 IEEE/ACM Innovating the Network for Data-Intensive Science (INDIS) INDIS 2019

Table of Contents

Message from the Workshop Chairs .v.....
Organization .vi.....

Technical Papers

SCinet DTN-as-a-Service Framework .1.....
Se-young Yu (Northwestern University), Jim Chen (Northwestern University), Fei Yeh (Northwestern University), Joe Mambretti (Northwestern University), Xiao Wang (Northwestern University), Anna Giannakou (Lawrence Berkeley National Lab), Eric Pouyoul (Lawrence Berkeley National Lab), and Marc Lyonnais (Ciena Inc)

bwNetFlow: A Customizable Multi-Tenant Flow Processing Platform for Transit Providers .9.....
Daniel Nägele (BelWü-Koordination University of Stuttgart, Germany), Christopher B. Hauser (Ulm University, Germany), Leonard Bradatsch (Ulm University, Germany), and Stefan Wesner (Ulm University, Germany)

Estimation of RTT and Loss Rate of Wide-Area Connections Using MPI Measurements .17.....
Nageswara Rao (Oak Ridge National Laboratory), Neena Imam (Oak Ridge National Laboratory), Zhengchun Liu (Argonne National Laboratory), Rajkumar Kettimuthu (Argonne National Laboratory), and Ian Foster (Argonne National Laboratory)

Co-Scheduling of Advance and Immediate Bandwidth Reservations for Inter-Data Center Transfer .25.....
Aiqin Hou (Northwest University, China), Chase Q. Wu (New Jersey Institute of Technology, USA), Liudong Zuo (California State University, Dominguez Hills, USA), Dawei Quan (Northwest University, China), Yangyang Li (Northwest University, China), Michelle M. Zhu (Montclair State University, USA), Qiang Duan (Penn State University, Abington, USA), and Dingyi Fang (Northwest University, China)

Hop Recording and Forwarding State Logging: Two Implementations for Path Tracking in P4 .36.....
Silke Knossen (Security and Network Engineering master - University of Amsterdam), Joseph Hill (Systems and Networking Lab (SNE) - University of Amsterdam), and Paola Grosso (Systems and Networking Lab (SNE) - University of Amsterdam)

G2: A Network Optimization Framework for High-Precision Analysis of Bottleneck and Flow Performance .48.
Jordi Ros-Giralt (Reservoir Labs), Sruthi Yellamraju (Reservoir Labs), Atul Bohara (Reservoir Labs), Richard Lethin (Reservoir Labs), Josie Li (University of Virginia), Ying Lin (University of Virginia), Yuanlong Tan (University of Virginia), Malathi Veeraraghavan (University of Virginia), Yuang Jiang (Yale University), and Leandros Tassioulas (Yale University)

Training Classifiers to Identify TCP Signatures in Scientific Workflows .61.....
George Papadimitriou (University of Southern California), Mariam Kiran (Lawrence Berkeley National Laboratory), Cong Wang (Renaissance Computing Institute), Anirban Mandal (Renaissance Computing Institute), and Ewa Deelman (University of Southern California)

Sample Transfer Optimization with Adaptive Deep Neural Network .69.....
Hemanta Sapkota (University of Nevada, Reno), Md Arifuzzaman (University of Nevada, Reno), and Engin Arslan (University of Nevada, Reno)

Author Index 77.....