

# **2020 IEEE/ACM 2nd Annual Workshop on Extreme-scale Experiment-in-the-Loop Computing (XLOOP 2020)**

**Atlanta, Georgia, USA  
12 November 2020**



IEEE Catalog Number: CFP20W37-POD  
ISBN: 978-1-6654-2283-3

**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:	CFP20W37-POD
ISBN (Print-On-Demand):	978-1-6654-2283-3
ISBN (Online):	978-1-6654-2282-6

**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)

# **2020 IEEE/ACM 2nd Annual Workshop on Extreme-scale Experiment-in-the-Loop Computing (XLOOP) **XLOOP 2020****

## **Table of Contents**

<b>Message from the Workshop Chairs .....</b>	<b>v</b>
<b>Workshop Organization .....</b>	<b>vi</b>

### **Session 1**

<b>Cross-Facility Science with the Superfacility Project at LBNL .....</b>	<b>1</b>
<i>Bjoern Enders (Lawrence Berkeley National Laboratory, USA), Deborah Bard (Lawrence Berkeley National Laboratory, USA), Cory Snavely (Lawrence Berkeley National Laboratory, USA), Lisa Gerhardt (Lawrence Berkeley National Laboratory, USA), Jason Lee (Lawrence Berkeley National Laboratory, USA), Becci Trotzke (Lawrence Berkeley National Laboratory, USA), Katie Antypas (Lawrence Berkeley National Laboratory, USA), Suren Byna (Lawrence Berkeley National Laboratory, USA), Ravi Cheema (Lawrence Berkeley National Laboratory, USA), Mark Day (Lawrence Berkeley National Laboratory, USA), Aditi Gaur (Lawrence Berkeley National Laboratory, USA), Anette Greiner (Lawrence Berkeley National Laboratory, USA), Taylor Groves (Lawrence Berkeley National Laboratory, USA), Miriam Kiran (Lawrence Berkeley National Laboratory, USA), Quincey Koziol (Lawrence Berkeley National Laboratory, USA), Kelly Rowland (Lawrence Berkeley National Laboratory, USA), Chris Samuel (Lawrence Berkeley National Laboratory, USA), Ashwin Selvarajan (Lawrence Berkeley National Laboratory, USA), Alex Sim (Lawrence Berkeley National Laboratory, USA), David Skinner (Lawrence Berkeley National Laboratory, USA), Rollin Thomas (Lawrence Berkeley National Laboratory, USA), and Gabor Torok (Lawrence Berkeley National Laboratory, USA)</i>	
<b>Tomographic Reconstruction of Dynamic Features with Streaming Sliding Subsets .....</b>	<b>8</b>
<i>Tekin Bicer (Argonne National Laboratory, US), Viktor Nikitin (Argonne National Laboratory, US), Selin Aslan (Argonne National Laboratory, US), Doğa Gursoy (Argonne National Laboratory, US), Rajkumar Kettimuthu (Argonne National Laboratory, US), and Ian T. Foster (Argonne National Laboratory, US)</i>	

Toward an Automated HPC Pipeline for Processing Large Scale Electron Microscopy Data	.16.....
<i>Rafael Vescovi (Argonne National Laboratory, USA), Hanyu Li (University of Chicago, USA), Jeffery Kinnison (University of Notre Dame, USA), Murat Keceli (Argonne National Laboratory, USA), Misha Salim (Argonne National Laboratory, USA), Narayanan Kashthuri (University of Chicago, USA), Thomas Uram (Argonne National Laboratory, USA), and Nicola Ferrier (Argonne National Laboratory, USA)</i>	

## Session 2

Managing Event Oriented Workflows	.23.....
<i>David Marchant (Niels Bohr Institute, University of Copenhagen), Rasmus Munk (Niels Bohr Institute, University of Copenhagen), Elise Brenne (Department of Energy Conversion and Storage, Technical University of Denmark), and Brian Vinter (Aarhus University)</i>	
Interactive Parallel Workflows for Synchrotron Tomography	.29.....
<i>Dilworth Parkinson (Lawrence Berkeley National Laboratory), Harinarayan Krishnan (Lawrence Berkeley National Laboratory), Daniela Ushizima (Lawrence Berkeley National Laboratory), Matthew Henderson (Lawrence Berkeley National Laboratory), and Shreyas Cholia (Lawrence Berkeley National Laboratory)</i>	
Towards Online Steering of Flame Spray Pyrolysis Nanoparticle Synthesis	.35.....
<i>Maksim Levental (University of Chicago), Ryan Chard (Argonne National Laboratory), Joseph Libera (Argonne National Laboratory), Kyle Chard (University of Chicago), Aarthi Koripelly (University of Chicago), Jakob Elias (Argonne National Laboratory), Marcus Schwarting (Argonne National Laboratory), Ben Blaiszik (University of Chicago), Marius Stan (Argonne National Laboratory), Santanu Chaudhuri (Argonne National Laboratory), and Ian Foster (University of Chicago)</i>	
<b>Author Index</b>	<b>41 . . . . .</b>