

2021 4th International Conference on Hot Information-Centric Networking (HotICN 2021)

**Nanjing, China
25-27 November 2021**



**IEEE Catalog Number: CFP21O97-POD
ISBN: 978-1-6654-0550-8**

**Copyright © 2021 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:	CFP21O97-POD
ISBN (Print-On-Demand):	978-1-6654-0550-8
ISBN (Online):	978-1-6654-0549-2

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

2021 4th International Conference on Hot Information-Centric Networking

HotICN 2021

Table of Contents

Preface	v
Conference Committees	vi

❖ BlockChain

A Location-based and Hierarchical Framework for Fast Consensus in Blockchain Networks.....	1
<i>Hao Guo, Wanxin Li, Mark Nejad</i>	
Research on Cross-chain Communication Based on Decentralized Identifier.....	7
<i>Chao Peng, Yimin Yu, Jinyi Zhao, Houhui Yu</i>	
Greedy Channel Balanced Routing Strategy of Payment Channel Networks.....	13
<i>Ru Huo, Dong Ni, Qingxia Chen, Yunfeng Xia</i>	
The Blockchain Name System (BNS): Polymorphic Identification Technology for Blockchain Supervision...	19
<i>JingYi Wang, YiMin Yu, JinYi Zhao, HouHui Yu</i>	
P-CFT: A Privacy-preserving and Crash Fault Tolerant Consensus Algorithm for Permissioned Blockchains	26
<i>Wanxin Li, Collin Meese, Mark Nejad, Hao Guo</i>	
Blockchain-Based Trusted Instant Messaging Model Research	32
<i>Huiyuan Wang, Yimin Yu, Jinyi Zhao, Jingyi Wang</i>	
CNRide: Applying a Credit Network to a Privacy-Enhanced Ride-Hailing Service	38
<i>Songwei Li, Qingtao Wang, Yankai Xie, Zhen Wang, Chi Zhang, Lingbo Wei</i>	
A Cooperative Game Theory and Blockchain based Elastic Bilateral Task Allocation Algorithm for In-network Computing	44
<i>Wenyi Su, Zehang Qiu, Kai Lei</i>	

❖ Information Centric Networking (ICN)

Anchored Secret Sharing for Access Control with Fast Revocation in Named Data Networking*	51
<i>Jiangtao Luo, Chen He, Junxia Wang, Lianglang Deng, Yongyi Ran</i>	
Network Resource Planning for Minimizing VRTT based on Cost Constraint.....	57
<i>Quan Zheng, Siwei Peng, Xiaobin Tan, Liu Yuan</i>	
GNSS Aided Precision Multi-clock Synchronization	63
<i>Lihua Yang, Bing Li, Yue Yin</i>	

Reinforcement Learning Based Dynamic Adaptive Video Streaming for Multi-client over NDN.....	68
<i>Dezheng Liu, Xiaobin Tan, Yangyang Liu, Yi He, Quan Zheng</i>	
An Programmable Control Plane Framework by Using Behavior Tree	74
<i>Gao Xianming, Feng Tao, Du Jinhua, Jiang Shanqing</i>	
NSACS-PS: A Named Service Access Control Scheme Based on Proxy Signature in Named Computing First Networking.....	81
<i>Huan Chen, Yu Tao, Yi Zhu</i>	
INTCP: Information-centric TCP for Satellite Network	86
<i>Jinyu Yin, Li Jiang, Xinggong Zhang, Bin Liu</i>	
❖ New Technology for Future Network	
Collaborative Task Processing in Vehicular Edge Computing Networks	92
<i>Xiao Bai, Shanzhi Chen, Yan Shi, Chengzhi Liang, Xiaochen Lv</i>	
Research on Key Technology and Pioneering Practice for Mega-Constellation Network.....	98
<i>Peng Zhao, Jiang Liu, Xuanyue Zha, Chunlong Wang, Xingrui Ma, Tao Huang</i>	
Efficient SDN Controller Load Balancing Using Deep Reinforcement Learning	105
<i>Xi Deng, Deyun Gao, Zhiruo Liu, Meiyi Yang, Wei Quan</i>	
Research on Performance Optimization Method of Edge Collaborative 6LoWPAN Sensor Network	111
<i>Zhanping Zhang, Shuxu Zhao, Jinghong Xing, Shuangping Zhao, Xiaolong Wang, Shumei Han, Jiazhen Zhang</i>	
Towards Network-Wide Scheduling for Cyclic Traffic in IP-based Deterministic Networks.....	117
<i>Yudong Huang, Shuo Wang, Tao Feng, Jiasen Wang, Tao Huang, Ru Huo, Yunjie Liu</i>	
GRouting: Dynamic Routing for LEO Satellite Networks with Graph-based Deep Reinforcement Learning	123
<i>Hao Wang, Yongyi Ran, Lei Zhao, Junxia Wang, Jiangtao Luo, Tao Zhang</i>	
C-INT: An Efficient Cluster Based In-Band Network Telemetry	129
<i>Dandan Mo, Zhiruo Liu, Du Chen, Deyun Gao</i>	
An Implementation of TSN in a Robotic Manipulator Teleoperation System.....	135
<i>Yuanyuan Yan, Hailong Zhu, Yu Bai, Huayu Zhang, Qing Li</i>	
❖ Cloud Network Integration	
NCA: Accelerating Network Caching with eXpress Data Path	141
<i>Peng Wu, Shuo Wang, Tao Feng, Yudong Huang, Tao Huang, Yunjie Liu</i>	

Author Index