

2024 International Symposium on Parallel Computing and Distributed Systems (PCDS 2024)

**Singapore
21-22 September 2024**



**IEEE Catalog Number: CFP24UX7-POD
ISBN: 979-8-3503-4966-5**

**Copyright © 2024 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:	CFP24UX7-POD
ISBN (Print-On-Demand):	979-8-3503-4966-5
ISBN (Online):	979-8-3503-4965-8

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
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

The 1st International Symposium on Parallel Computing and Distributed Systems (PCDS2024)

Table of Contents

Section 1: Algorithms and Technologies for Parallel Computing and Distributed Systems

SVGDoc: A CRDT for Collaborative Vector Graphics Editing.....	1
<i>Bryn Ghiffar, Jason Jeremy Wijadi, Ida Bagus Kerthyayana Manuaba</i>	
A Study On The Performance of WebAssembly Versus JavaScript In An SVG Editor Environment	6
<i>Jason Jeremy Wijadi, Bryn Ghiffar, Ida Bagus Kerthyayana Manuaba</i>	
PNS Lock: A portable NUMA-Aware lock with a standard interface	11
<i>Brahmaiah Gandham, Praveen Alapati</i>	
Parallel Swarm Propagation for Neural Networks	20
<i>Arghya Bhattacharya, V Premanand</i>	
Systematic Literature Review of VANET Simulators: Comparative Analysis, Technological Advancements, and Research Challenges	26
<i>Reham Almutairi, Giacomo Bergami, Graham Morgan</i>	
Efficient GPU Implementation of Particle Interactions with Cutoff Radius and Few Particles per Cell.....	37
<i>David Algis, Berenger Bramas, Emmanuelle Darles, Lilian Aveneau</i>	
Movie Recommender System based on Generative AI	45
<i>Carmen Pei Ling Tung, Su-Cheng Haw, Wan-Er Kong, Palanichamy Naveen</i>	
Wireless Multihop Transmissions with Concurrent Forwarding without Collisions by Capture Effect	52
<i>Shintaro Okazaki, Hiroaki Higaki</i>	
Distributed Tracing for InterPlanetary File System.....	59
<i>Sushant Kumar Gupta, Marshall David Miller, Rachel Han, Haorui Guo</i>	
Controlled copying of persistent data between end users' SGX enclaves over an untrusted network.....	64
<i>Jun ISHIGURO, Yasushi SHINJO, Akifumi SOYAMA</i>	
New Parallel Order Maintenance Data Structure	74
<i>Bin Guo, Emil Sekerinski</i>	
Affordable HPC: Leveraging Small Clusters for Big Data and Graph Computing.....	79
<i>Ruilong WU, Yisu WANG, Dirk KUTSCHER</i>	
A Dynamic Distributed Scheduler for Computing on the Edge	88
<i>Fei Hu, Kunal Mehta, Shivakant Mishra, Mohammad Almutawa</i>	
Lie Group-Based Optimization of the Greater Cane Rat Algorithm	95
<i>Xinpeng Xu, Yukai Du, Chuan Qin</i>	

DiFlip: Directed Flip-Chain Operation for Regular Directed Graph.....	105
<i>Saptadi Nugroho, Christian Schindelhauer</i>	
Machine Learning-based Decision Making for Charging/Discharging Cost Optimization of PHEV in Smart City ...	111
<i>Gone Neelakantam</i>	
A Dynamic Distributed Scheduler for DNN Inference on the Edge	117
<i>Fei Hu, Shivakant Mishra</i>	
Adversarial Bidding Profiles for Mechanism Design.....	123
<i>Senlong Xu, Hao Wu</i>	
Research on Intelligent Maneuvering Decision Making Based on Deep Reinforcement Learning	130
<i>Yao Wang, Yi Jiang, Huiqi Xu, Yuan Zhang</i>	
Research on Power Big Data Fusion Method Based on Graph Convolutional Neural Network	136
<i>Runyang Ji</i>	
An Optimization Method for National Cryptography Algorithm	141
<i>Jun Hu, Jiajun Li, Qiushi Xi, Song He, Yahui Hu, Min Cheng</i>	

Section 2: Cloud Computing, Edge Computing and IoT

A GMM-CGABC Based Energy Replenishment Scheme for On-Demand Wireless Rechargeable Sensor Networks.....	146
<i>S.Sudhamsu Mouli, T.Veeraiah, K.Mahesh, M.P.Singh</i>	
An Investigative Study of WebAssembly Performance in Cloud-to-Edge	151
<i>Sangeeta Kakati, Mats Brorsson</i>	
Performance Analysis of Image Classification between Edge and Cloud Computing	156
<i>Natthasak Vechprasit, Annop Monsakul, Pramuk Boonsieng</i>	
Real Time Measurement Analysis of a Secured Wireless Communication Testbed	164
<i>Sneha Chennamsetty, Subbarao Boddu</i>	
Optimization of Temporal Convolutional Network for Remaining Useful Life Prediction of Lithium Ion Battery Using Separable Convolution	169
<i>Atsushi Miyawaki, Nobuaki Kobayashi</i>	
Interactive Data Visualization To Optimize Decision Making Process	175
<i>Zheng-Bin Phang, Su-Cheng Haw, Tong-Ern Tai, Kok-Why Ng</i>	
Multi-Parameter Log Anomaly Detection with an Unsupervised Learning Approach	181
<i>Hironori Uchida, Keitaro Tominaga, Hideki Itai, Yujie Li, Yoshihisa Nakatoh</i>	
RainCloud: Decentralized Coordination and Communication in Heterogeneous IoT Swarms	186
<i>Filip Loisel, Geri Zego, Andrea Morichetta, Anna Lackinger, Schahram Dustdar</i>	
Research on user identity authentication method based on edge computing	196
<i>Hong Yang, Tingxiao Cai, Chi Zhang, Jingjing Wang</i>	

Section 3: Security and Blockchain Technology

The Influence of Implementing Enterprise Resource Planning (ERP), Human Capital Management (HCM), and Supply Chain Management (SCM) to Enhance Company's Performance Effectiveness	200
<i>Chris Jericho, Jansen Febrian, Meiryani</i>	
Cybersecurity Insights: Analyzing IoT Data through Statistical and Visualization Techniques.....	206
<i>Jing Li, Mohd Shahizan Othman, Hewan Chen, Lizawati Mi Yusuf</i>	
Implementing censorship-resistant trusted email using blockchain technology	216
<i>Yasushi SHINJO, Taiki WATANABE, Yi ZHOU, Kazuki Takarada, Masahira NAKAMURA</i>	
Enhancing Security and Performance in PyTorch: A Hybrid Fuzzing Approach	223
<i>Varun Chawla</i>	
Research on Graph Injection Attack Method Based on Multi objective Feature Optimization in the Electric Power Field.....	231
<i>Runyang Ji</i>	