

# **2024 OkIP International Conference on Advances in Parallel and Distributed Computing (APDC)**

**Monday, 1 April 2024 - Thursday, 4 April 2024**

**Tiako Center, Oklahoma City, OK, USA & Online**

## **Scientific Tracks**

## High-Performance Computing (HPC)

HPC Advanced Concepts  
Performance | Scalability | Virtualization  
Visualization | Simulation | Modelisation  
Prediction | Program Optimization | Workloads  
Algorithms | Networks | Efficiency | Scheduling  
Compiler Design and Technologies  
HPC Components and Technologies  
Data Management and Transport | Compilation  
Load Balancing | Resource Management  
Fault Tolerance | Reliability | Availability  
Multicore Algorithms | Operating System  
Software Design and Implementations  
Asynchronous Methods | Interconnects  
Interconnections | Distributed Computing  
High Scalability Computing | Accelerators  
High-Performance Modeling/Software/Tools  
Routing Protocols | Quality of Service  
Allocation Framework | Benchmarks | ...  
Other

## Parallel Computing

Parallelism | Automatic Parallelization  
Programming Languages/Libraries/Tools  
Programming Models/Environments  
Parallel Metaheuristics/Application-Behavior  
Parallel/Distributed Algorithms/Architectures  
Energy Factors/Technological Factors  
Partitioning and Optimal Scheduling  
Systems Performance/Potential/Efficiency  
Distributed/Heterogeneous Systems  
System Synergy and Optimization  
Advances in Parallel Models/Systems/Tools  
Other

## Mobile & Wireless Computing

Communication Modeling/Designing/Analysis  
Mobile Communication Prediction/Control  
Mobile/Wireless Systems-of-Systems  
Mobile/Wireless Software and Hardware  
Heterogeneous Wireless Networks  
Medical Alert Devices/Privacy Consideration  
Wireless Sensor Network | IoT Platforms  
Mobile Network Loss Issues  
Ultra-Dense Networks | Mobile Performance  
Sensor Networks and Embedded Applications  
Innovative Mobile/Wireless Networks/Systems

Other

## Network Architecture/System

Interconnection Networks and Architectures  
Memory Architecture Evaluation  
I/O, File Systems, and Memory Systems  
Power-Efficiency | Systems-on-Chip  
System Modeling Methodologies  
Fault-Tolerant Algorithms/Systems  
Scalable Servers and Systems  
Shared Memory Implementation  
Memory Exploitation/Management Techniques  
Network Storage Systems and Services  
Cluster Management/Architecture  
Heterogeneous Architectures/Accelerators  
Multi/Many-Core/CPU Framework/Systems  
Micro-Architecture Techniques  
Reconfigurable Architectures/Systems  
Other

## Security and Parallel/Distributed Systems

Security | Privacy | Compliance | Simulation  
Edge Computing Security  
Trusted Computing | Crowdsourcing  
Cyber-physical Systems Security  
Distributed Systems Security  
Embedded Systems Security  
IS Virtualization and Data Center Network  
Secure Internet Connectivity  
Cloud Security and Adoption Risks  
Physical-layer Security  
Surrogate Modeling | Machine Learning  
Neural Architecture Performance  
Deep Learning | Agent-based Modeling  
Intelligent Algorithm| Artificial Neural Network  
Distributed Deep Learning Systems  
Hybrid/Complex System Modeling/Simulation  
Advanced/Stochastic Simulation Frameworks  
Security, Policy, and Management Issues  
Configuration, Policy, and Management issues  
Graph Partitioning/Analysis/Analytics  
Spiking Neural P Systems | Data Integrity  
Enabling Blockchain-as-a-Service  
Fuzzy Logic Approach | Streaming Algorithms  
Association Rule Mining | Anomaly Detection  
Big Data Analytics and Applications  
Identity/Credential/Trust Management  
Cloud Accountability/Auditability/Trust  
Authentication and Authorization Support  
Security/Privacy/Compliance Control

Privacy Protection and Preservation  
Data Protection and Loss/Leakage Prevention  
Integrity/Systems Risk/Mitigation Management  
Intrusion Detection System/Failure Awareness  
Security/Privacy as a Service  
Trust/Cryptography/Blockchain as a Service  
Cloud Resiliency/Fault Tolerance  
Cloud Disaster Recovery | Anomaly Detection  
Traffic Reliability | Multi-Tier Cloud Apps  
Cloud Risk/Mitigation/Cognitive-Compliance  
Availability/Transparency/Regulation/Policy  
Other

## **Blockchain and Information Warfare in Wireless/Parallel/Distributed Systems**

Blockchain and Distributed Ledgers  
Wireless and Digital Forensics  
Trust Authority Distribution  
Wireless Network Information Assurance (IA)  
Bluetooth Information Assurance  
Radio Frequency Fingerprints  
Intelligent Forensic Systems  
Honeypot Deception and Forensics  
Steganography Techniques  
Cyber-Attack Thwarting  
Crime Data Mining  
Anti-Spam Filtering Techniques  
Untrusted Hardware Testing  
Privacy Preservation and Protection  
Intelligent and Secure Autofill Systems  
Blockchain and Energy Systems  
Secure Passport System  
Insider Threat Prediction  
Key Management and Recovery  
Asset Tracking and Financial Services  
Critical Infrastructure Protection  
Threat Awareness Analysis  
Traffic Flow Confidentiality  
Intellectual Property Protection  
Cyber-Attack and Cyber-Terrorism  
Tamper Detection and Prevention  
Physical Security and Soldier Security  
Electromagnetic Bomb and Electronic Attack  
Tactical Communication and Network Security  
Distributed Consensus | Smart Contracts  
Other

## **Parallel/Distributed Applications**

HPC Applications and Case Studies  
Grid/Cloud/Fog/Bio-inspired Computing  
Scientific/Engineering/Commercial Workloads  
Augmented/Virtual Reality  
Biotechnology, Nanotechnology, and Finance  
Space Research, Urban Planning, and Energy  
Teleimmersion | Collaborative Applications  
Media/Entertainment Industry | Visualization  
Workflow Management | HPC Resiliency  
Advanced Computational Methods/Applications  
Other

## **Cloud Computing Concepts/Applications/Services**

Pervasive Computing | Cloud Standards  
Public/Private/Hybrid Cloud | Governance  
Multi-Tenancy Clouds | 5G/6G/7G Cloud  
Business Models | Industry-Specific Clouds  
Middleware Frameworks | COTS Vs SaaS  
Load Balancing | Cloudsourcing | ...  
Application Portability/Scalability/Availability  
Application Modeling/Performance/Monitoring  
Application Dvlpmt/Debugging Method/Tool  
Application Testing/Architectures  
Programming Models/Benchmarks/tools  
Service Design/Creation/Delivery/Pricing  
Service Modeling/Specification/Composition  
Service Discovery/Monitoring/Control  
Service Innovation/Operation/Strategy  
Service Marketing/Management/Deployment  
Service Frameworks/Standardization  
Data Management Applications/Services/Tools  
Everything as a service XaaS/IaaS/PaaS/SaaS  
Service Delivery/Integration/Orchestration  
Other

## **Platform/Provisioning/Storage in Parallel/Distributed Systems**

Modeling and Provisioning in Cloud | Kernels  
Virtualisation Technologies/Enablers  
Software-Defined Networking | Microservices  
Containers | Public/Private/Hybrid Storage  
Integrated Circuits | Processing Units  
FPGAs/GPUs/APUs/TPUs/vCPUS Design  
System Scalability/Performance/Evaluation  
Computational Resources/Engines/Functions  
Storage Type/Process/Architecture  
Object/Block/File/Archival Storage  
Resource Provisioning/Monitoring/Management  
Resource Evaluation/Maintenance  
Serverless Design/Development/Deployment

Serverless Functions/Applications/Services  
In-Memory Storage | Performance Prediction  
CPU/Memory Resource Requirements  
Cost-Effectiveness/Awareness  
API Platform/Ecosystem  
Other

## Infrastructure in Parallel/Distributed Systems

Performance and Optimization in the Cloud  
Architect. Modeling/Components Distribution  
Cloudlet Infrastructure | Edge-Cloud Systems  
Energy Efficiency | Performance Acceleration  
Performance Monitoring/Evaluation  
Multi-Cloud/Heterogeneous Environment  
Distributed Infrastructure/Architecture  
Workload-Alloc. |Hyperparameter Optimization  
Elasticity in Cloud | Crowd Computing  
Large-Scale Optimization | Fog Computing  
Virtualized/Cloud/Green Data Centers  
Portability/Interoperability/Mobility  
Auditor/Carrier/Broker/Provider/Customer  
Dynamic Resources/Service/Context Mgmt  
Dynamic Cloud Innovation/Integration/Coop.  
Dynamic Cloud Experimentation/Adaptability  
Data Reduction/Compres./Recovery/Encryption  
Genetic/Graph Algorithms in the Cloud  
Association-Rule/Data Mining in the Cloud  
Cloud Big Data Analytics/Benchmarks  
Bayesian Networks/Optimization in the Cloud  
Cloud Deep/Reinforcement/Machine Learning  
Neural-Network/Collective Intelligence  
Cloud Blockchain-Based Systems | eLearning  
IoT Cloud Infrastructure/Models/Architectures  
Stream Processing on the Cloud  
eBanking/eBusiness/eGovernance/eHealth  
Context-aware/Peer-to-Peer Computing  
Other

## Data and Big Data in Distributed Systems

Data Encryption Techniques  
Data Mining Theoretical Foundation  
Scientific and Statistical Data Mining  
Data Mining and Knowledge Discovery  
Data Mining Products/Systems/Languages  
Big Data Search/Mining | Web Mining  
Decision Support Data Systems  
Dimensional Data Modeling  
Big Data Security/Privacy/Trust  
Big Data Infrastructure | Web Analytics  
Text Analytics | Big Data as a Service

Big Data and Information/Data Quality  
Change Detection | Big Data Applications  
Social Web Search and Mining  
Deep Learning and Big Data  
Big Data Computational Models  
Smart Grid Big Data | Text Mining  
Big Data Cloud Computing  
Big Data Stream Computing  
Intelligent Data Retrieval System  
Database Applications and Experiences  
Scientific and Biological Databases  
Smart Cities and Urban Data Analytics  
Sensor Network Data Management  
In-Network Data Processing  
In-Memory/Purpose-built Databases  
Distributed/Parallel/Peer-to-Peer Databases  
Deep/Dark/Hidden Web Data Management  
Energy-Efficient Data Centers  
Storage Systems Security/Reliability  
Data Loss/Breach Prevention & Protection  
Visual and Audio Data Mining  
Information Visualization  
Open Source Databases  
Software Engineering Data  
Virtualized Data Center Network  
Medical/Biomedical Big Data  
Medical Data Interoperability/Security  
Other

## **Algorithms/Models/Programming in Distributed Systems**

Wireless/Parallel/Distributed Algorithms  
Algorithms, Models, and Formal Verification  
Graph Algorithms |  
Model Checking for Parallel Computing  
Message/Shared-Memory Broadcasting  
Wireless Networks Modeling  
Scalable Algorithms and Applications  
Algorithms for Data in Distributed Systems  
Parallel Programming Paradigms and APIs  
FPGAs/GPUs/APUs/TPUs/vCPUS Programming  
Bio/Nature-Inspired Parallel Algorithms  
Parallel and Distributed Algorithms for AI  
Algorithms for Social Networks  
Urban/Vehicular Networks and Applications  
Parallel, Distributed Big-Data Management  
Massively Parallel/Distributed Data Visualization  
Other

## **Distribution, Componentization, and Collaboration**

Formal Methods and Theoretical Foundations  
Component-Based Software Engineering  
Critical and Embedded Software Design  
Distributed and Parallel Systems  
Real-time Embedded Software Engineering  
Cloud Computing | Distributed SE  
Distributed and collaborative SE  
Workflow Management | Team-Based SD  
Computer-Supported Cooperative Work  
Middleware, Frameworks, and APIs  
Parallel, Distributed, and Concurrent Systems  
Aspect-Oriented Software Engineering  
Decentralized Artificial Intelligence  
Other