

Call for Book Chapters

It is our pleasure to invite a book chapter proposal for our Edited Book entitled "**Predictive Analytics in Cloud, Fog, and Edge Computing: Perspectives and Practices of Blockchain, IoT, and 5G**". It will be published by Springer and it is under consideration to be indexed by SCOPUS, Web of Science and many more.

Overview

The proposed edited book is going to cover the relationship of recent technologies (such as Blockchain, IoT, and 5G) with the cloud computing as well as fog computing, and mobile edge computing. The relationship will not be limited to only architecture proposal, trends, and technical advancements. The book will also explore power of predictive analytics of Blockchain, IoT, and 5G data in Cloud computing with its sister technologies. Since, the amount of computing, storage and network resources increases day-by-day, artificial intelligence (AI) tools are becoming more popular due to their capability which can be used in solving wide variety of issues, such as minimize the energy consumption of physical servers, optimize the service cost, improve the quality of experience, increase the service availability, efficiently handle the huge data flow, manages the large number of IoT devices, etc. Considering the popularity of above mentioned technologies and their dependence on cloud computing, we felt that there is a need to provide the perspective and practice of Blockchain, IoT, and 5G in the context of cloud computing.

Objective

The purpose of this edited book is to provide an in-depth understanding of issues, challenges, and solutions to process Blockchain, IoT, and 5G data in cloud computing and its sister technologies such as fog computing and edge computing. . Moreover, the edited book is targeting to provide the application-specific issues of cloud computing in the smart healthcare, smart city, and 5G wireless communications. The readers will get the fresh exposure to applying the concepts to applications and will get to know about the recent tools, software, and simulations available to experiment cloud computing ideas in relation with diversified data. In addition to that, the book will bring value by exposing the reader with Artificial Intelligence tools and algorithms available to design systems to tackle the cloud computing issues.

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The tentative topics of interest included but not limited to:

Chapter 1: Introduction to cloud, fog, and edge computing.

Chapter 2: Background on Blockchain, IoT, and 5G.

Chapter 3: Tools and techniques for cloud, fog, and edge Computing.

Chapter 4: Real-time Applications and Case studies of Cloud computing.

Chapter 5: Blockchain in cloud computing.

Chapter 6: Blockchain and Cloud E-learning.

Chapter 7: A case study of Blockchain with cloud.

Chapter 8: IoT data Analytics in cloud/edge/fog computing.

Chapter 9: IoT in Healthcare cloud.

Chapter 10: Cloud in Smart IoT Healthcare.

Chapter 11: 5G, wireless communication, and Cloud analytics.

Chapter 12: 5G-enabled Smart city data analytics in cloud.

Chapter 13: Integrating 5G, Cloud, and AI.

Submission:

Tentative abstract (approx 200-250 words) along with the title of the chapter, authors' names (with affiliations) and tentative structure (headings) of the chapter should be emailed to research.hiren@gmail.com with the subject "**Book chapter proposal submission for Predictive Analytics in Cloud**".

Important Dates:

Chapter Proposal Submission Deadline	: Jan 10, 2022 , Jan 17, 2022
First Editorial Decision Due	: Jan 31, 2022
Full Chapter Submission Deadline	: Apr 15, 2022
Review Decision Due	: May 15, 2022
Revision and Re-Review (if required)	: Jul 15, 2022
Final Editorial Decision Due	: Aug 15, 2022
Compilation and Submission of the Chapters to the Publisher	: Sep 15, 2022
Publication	: Nov 15, 2022
Publisher	: Springer
Publication Fee	: Nil

Book Editors:

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List of Units and Chapters

Unit 1: Introduction

Chapter 1: Cloud, Fog, and Edge computing: Special Research Issues

- Technological View of Cloud computing.
- Emerging distributed computing systems: Fog and Edge computing.
- Resource scaling: Towards Inexpensive and lightweight resource scaling in Cloud.
- Resource Utilization: A relook at strategies for Efficient Virtual Network Embedding.
- Fault Tolerance: Issues in self-healing and Preemptive resource migration.
- Load balancing: Real-time task scheduling algorithms for Edge computing.
- Cost minimization: Delay minimization in Fog computing for IoT devices.

Chapter 2: Background on Blockchain, IoT, and 5G: Legacy and recent Issues

- Blockchain and Cloud of Things: State-of-art architecture and applications.
- Blockchain secured Fog computing: Issues in computing strategies.
- **FogIoT**: Approaches for IoT data processing in Fog/Edge computing.
- **Fog5G**: Communication challenges in Fog enabled smart environments.
- Convergence and promises of Cloud with Blockchain, IoT, and 5G.

Chapter 3: Tools and techniques for real-time setup in Cloud, Fog, and Edge Computing

- Cloud web services and resource monitoring: Case study of amazon cloudwatch.
- AppDynamics: Introducing the Cloud-based network monitoring tool.
- Setup and build Microsoft Azure for workload analysis.
- End-to-end guide on installation, setup, building, and running Solarwind Cloud.
- Deploying Infrastructure as a Service (IaaS): DX Infrastructure Manager.
- **EdgeIT**: Early data analytics in Edge using ML.
- **FogIT**: Intermediate data analytics using ML and Heuristics.
- **CloudIT**: Deep data analytics in Cloud using ML and DL.

Chapter 4: Real-time Applications and Case studies of Predictive Analytics in Cloud

- Turbofan Engine: Remaining Useful Lifetime Prediction using RL.
- Case study of diabetic retinopathy: Medical image data analytics using DL in cloud.
- Real-time Web apps deployment analytics.
- Cloud enabled data modeling: Case study of live and real-time chatbots.
- Customer-centric cloud insights analysis: Predictive data mining.
- Blockchain Disrupt Predictive Analytics: Pay-per-use-system with Natural Language Processing.

Unit 2: Blockchain and Predictive analytics

Chapter 5: Blockchain-as-a-Intelligent service (Baas)

- Blockchain in cloud computing: Recent architectures and future.
- Blockchain enabled cloud/Fog/Edge: Integration Issues.
- Predictive Cloud service access control methods using Blockchain.
- **DoCS analytics**: Blockchain-based denial of cloud service attack mitigation schemes.
- **CSA analytics**: Blockchain-based cloud storage analytics for theft prevention.
- **Deep Imalytics**: Deep learning with blockchain for Cloud image data analytics.
- Predictive Authentication via a Blockchain-Based identity.
- Blockchain-based security frameworks for cloud services and deployments.

Chapter 6: Blockchain and Cloud E-learning: Trend, technology, and solutions

- **Secured E-learning:** Role of Cloud computing and Blockchain for secured e-learning.
- Cloud-based e-learning solutions.
- Present and pre-pandemic cloud resource usage analytics of EdTech solutions.
- Leveraging Predictive models for EdTech business with cloud computing.
- Accessibility and Reliability of EdTech solutions.
- Enabling data privacy of students and professors in e-learning environments.

Chapter 7: Blockchain with Cloud: Case study for e-governance and e-voting

- **Secured e-governance:** Cloud-based e-governance solutions using blockchain.
- **Threat Predictor:** Predicting potential threats and cyber-attack on e-governance.
- **Trust your vote:** Role of blockchain in cloud-enabled e-voting.
- **Sse-gov:** Securing geographical sensitive data of e-voting using AI analytics.
- Predictive analytics to automate e-governance services.
- Intelligent and secured decision support system for smooth e-governance.

Unit 3: IoT-enabled Predictive analytics

Chapter 8: Leveraging Edge/Fog/Cloud for streaming IoT data Analytics

- Predictive IoT data migration: from edge to fog.
- Predictive IoT data migration: from fog to cloud.
- Selective and localized IoT data analytics: from edge to fog to cloud.
- **PredQuictics:** Predictive Learning at the edge of the networks for Quick analytics.
- **EdgeAI:** Crowd IoT sensing and AI at the Edge.
- **FederatedEdge:** Federated-learning at the Edge.
- AI-based Applications for IoT and Cloud.
- AI@Edge in IoT Security and Privacy.
- AI-model for cloud storage lifecycle management for IoT.

Chapter 9: ML, DL, RL, NLP, and federated learning for IoT Healthcare data analytics

- **EdgeIoTAnalytics:** Supervised IoT healthcare data analytics at edge using ML.
- **CloudIoTAnalytics:** Unsupervised IoT healthcare data analytics in cloud using RL.
- Real-time streaming IoT data analytics edge and fog for continuous health monitoring using federated learning.
- **DeepEHR:** Deep Electronic health record analyzer using NLP methods.
- **DrugFinder:** Analyzing health prescriptions to locate and stock drugs using NLP.
- **DeepScanner:** IoT acquired medical image data analytics using CNN.
- Data prefetch analysis for periodic IoT data: Use case analysis of Google Cloud.

Chapter 10: Cloud in Smart IoT Healthcare: Conventional to Intelligent Analytics.

- All about storage, processing, and analytics in Cloud for healthcare data.
- Predictive Models for analyzing diversified community healthcare data.
- Methods and tools for Cloud-enabled CT and MRI Image Analysis using DL.
- **Real-time clinical data analysis:** Case study of NetAPP
- **CardiacBAN:** Massive Body Area Network Analysis in cloud for cardiac early warning.
- **ClaimPredictor:** Insurance big data analytics in the cloud using scalable ML models.

Unit 4: Predictive Analytics, 5G, and Cloud/Fog/Edge computing.

Chapter 11: 5G, wireless communication, and Cloud analytics

- Self-Organizing next generation network data analytics in the cloud.
- Intelligent 5G network estimation techniques in the cloud.
- 5G-cloud integration: Intelligent security protocol and analytics.
- 5G, Fog and Edge based approaches for Predictive Analytics
- 5G and beyond in Cloud, Edge, and Fog computing.
- AI-Enabled Next Generation 6G Wireless communication

Chapter 12: 5G-enabled Smart city data analytics in cloud

- Introduction to 5G-enabled Smart Cities (Transportation, water supply, Smart Parking, Traffic Congestion, Smart Lighting, energy consumption).
- Cloud services for real-time 5G communication data of smart cities.
- Real-time delay intolerant predictive analytics of 5G communication at Edge/fog.
- Cloud-based visualization tools for smart city data.
- SmartPathPredictor: Predicting 5G-enabled traffic movement using Reinforcement learning.
- 5G communication and smart parking using real-time data analysis.

Chapter 13: Integrating 5G, Cloud, and AI for diversified applications

- Explainable AI in 5G-enabled cloud for Healthcare analytics.
 - Reinforcement learning for 5G acquired traffic data analysis in the cloud.
 - Real-time cloud diagnostic analytics of 5G communication for crowdsourcing.
 - Nature-inspired learning in 5G supported cloud for predictive maintenance of communications.
 - On demand video streaming recommendations for 5G supported smartphones.
- Analyzing 5G Surveillance and Military data for predictive threat analysis.