



## Mobile Cloud Computing: Overview & Current Research Challenges

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### ABSTRACT

Today cell phones are turning into a basic part for human-life in their day-to-day activities. According to recent studies it was mentioned that Mobile Cloud Computing (MCC) will be incorporated by most of the corporate and tele-communication sectors to meet their business requirements effectively. In MCC, the mobile devices will interact with the cloud across a network for providing required information to the user. Mobile devices can be any of smart phones, PDA's, laptops, Tablet PC's etc... Cloud can be defined as a data storage area where the data can be stored. This article provides overview of Mobile Computing, Cloud Computing, Mobile Cloud Computing, and Challenges in Mobile Cloud Computing (MCC) and Research areas in Mobile Cloud Computing (MCC).

**Keywords:** *Mobile Computing, Cloud Computing, Mobile Cloud Computing, Challenges in Mobile Cloud Computing (MCC), Research Areas in Mobile Cloud Computing (MCC)*

### I. INTRODUCTION TO MOBILE CLOUD COMPUTING

The merging of both mobile computing and cloud computing can be known as mobile cloud computing. Mobile cloud computing technology can be inherited from the cloud computing technology.

Because of the bringing up in number of mobile devices such as smart phones, PDA's, laptops, tablet PC's, the mobile cloud computing technology innovation is turned out to be one of the best most potential and effective innovation sooner rather than later. In this section we will see in brief about mobile computing, cloud computing and mobile cloud computing.

#### I.1. Mobile Computing

The computation performed on mobile devices is referred to as Mobile Computing [1]. Mobile computing involves Mobile Communication [2], Mobile Hardware, and Mobile Software. A network consists of various mobile adhoc devices and the communication among these devices includes properties, operations and protocols. The collection of various mobile devices within a network can be termed as Mobile Hardware. The features and requirements of mobile applications can be termed as Mobile Software.

# Cloud Computing Overview Current Research Challenges

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## **Cloud Computing Overview Current Research Challenges:**

**Examining Cloud Computing Technologies Through the Internet of Things** Tomar, Pradeep, Kaur, Gurjit, 2017-11-30 The progressive combination of cloud computing and Internet of Things IoT will enable new monitoring services create powerful processing of sensory data streams and provide a new method for intelligent perception and connection Examining Cloud Computing Technologies Through the Internet of Things is a pivotal reference source for scholarly research on the latest and innovative facets of cloud based Internet of Things systems including technical evaluations and comparisons of existing concepts Featuring coverage on a broad range of topics such as fog computing network programming and data security this book is geared towards advanced level students researchers and professionals interested in exploring and implementing the IoT and related technologies Privacy and Security Challenges in Cloud Computing T. Ananth Kumar, T. S. Arun Samuel, R. Dinesh Jackson Samuel, M. Niranjana Murthy, 2022-03-14 This reference text discusses various security techniques and challenges for cloud data protection from both software and hardware aspects The text provides readers with an overview of cloud computing beginning with historical perspectives on mainframe computers and early networking protocols moving to current issues such as security of hardware and networks performance evolving IoT areas edge computing etc It also deals with threat detection and incident response in cloud security It covers important topics including operational security agitations in cloud computing cyber artificial intelligence AI platform for cloud security and security concerns of virtualization in cloud computing The book will serve as a useful resource for graduate students and professionals in the fields of electrical engineering electronics engineering computer science and information technology **Essentials of Cloud Computing** Chellammal Surianarayanan, Pethuru Raj Chelliah, 2019-08-27 This reader friendly textbook presents a comprehensive overview of the essential aspects of cloud computing from the origin of the field to the latest developments Rather than merely discussing the cloud paradigm in isolation the text also examines how cloud computing can work collaboratively with other computing models to meet the needs of evolving computing trends This multi dimensional approach encompasses the challenges of fulfilling the storage requirements of big data the use of the cloud as a remote server for Internet of Things and sensor networks and an investigation of how cloud computing is interlinked with edge fog and mist computing among other illuminating perspectives Topics and features includes learning objectives motivating questions and self test exercises in every chapter presents an introduction to the underlying concepts fundamental features and key technological foundations of cloud computing examines how enterprise networking and cloud networking can work together to achieve business goals reviews the different types of cloud storage available to address the evolution of data and the need for digitization discusses the challenges and approaches to implementing cloud security and the hot topic of cloud management highlights the value of cloud brokerage capabilities and explains the importance of cloud orchestration in multi cloud environments describes the details of cloud migration the crucial role of monitoring in optimizing

the cloud and the basics of disaster recovery using cloud infrastructure This technically rigorous yet simple to follow textbook is an ideal resource for graduate courses on cloud computing Professional software developers and cloud architects will also find the work to be an invaluable reference

**Inventive Communication and Computational Technologies** G. Ranganathan, Joy Chen, Álvaro Rocha, 2020-01-29 This book gathers selected papers presented at the Inventive Communication and Computational Technologies conference ICICCT 2019 held on 29 30 April 2019 at Gnanamani College of Technology Tamil Nadu India The respective contributions highlight recent research efforts and advances in a new paradigm called ISMAC IoT in Social Mobile Analytics and Cloud contexts Topics covered include the Internet of Things Social Networks Mobile Communications Big Data Analytics Bio inspired Computing and Cloud Computing The book is chiefly intended for academics and practitioners working to resolve practical issues in this area

**ICT for Competitive Strategies** Durgesh Kumar Mishra, Nilanjan Dey, Bharat Singh Deora, Amit Joshi, 2020-05-05 Fourth International Conference on Information and Communication Technology for Competitive Strategies targets state of the art as well as emerging topics pertaining to information and communication technologies ICTs and effective strategies for its implementation for engineering and intelligent applications

Global Business Expansion: Concepts, Methodologies, Tools, and Applications Management Association, Information Resources, 2018-04-06 As businesses seek to compete on a global stage they must be constantly aware of pressures from all levels regional local and worldwide The organizations that can best build advantages in diverse environments achieve the greatest success Global Business Expansion Concepts Methodologies Tools and Applications is a comprehensive reference source for the latest scholarly material on the emergence of new ideas and opportunities in various markets and provides organizational leaders with the tools they need to be successful Highlighting a range of pertinent topics such as market entry strategies transnational organizations and competitive advantage this multi volume book is ideally designed for researchers scholars business executives and professionals and graduate level business students

Ethics and Trust. A Literature Review on Cloud Computing Services Anna Lena Bischoff, 2017-03-01 Seminar paper from the year 2017 in the subject Business economics Offline Marketing and Online Marketing grade 1 7 Linneaus University School of Business and Economics course Contemporary Marketing language English abstract Even though security issues when using cloud computing services have been looked at from a technical perspective research has failed to explain why consumers use cloud services extensively despite their distrust Observations have been made that users are in a dilemma where they use a service they are not comfortable with Besides trust the ethical perspective of all stakeholders in cloud computing has not been discussed or connected to the issue of trust The unease consumers feel when signing up for a cloud service could be transformed from a dilemma into a competitive advantage Therefore it is of high interest to cloud service providers to understand how they can gain competitive advantage over competitors by building consumer relationships based on trust and ethical norms The results of this literature review show that making use of insights into

cloud computing issues and awareness for trustful ethical relationships with the customer service providers can create competitive advantage Following ethical norms and building trust with customers enables companies to gain first mover advantages in the field of cloud computing services They can successfully distance themselves from competitors by promoting marketing campaigns that emphasize their high ethical standards and treatment of users This paper adds the dimension of ethics to the dilemma of mistrust in cloud computing exploring whether this is a key influence on consumer trust since there was a research gap discovered in researching a trustful provide user relationship as well as an ethical perspective in cloud computing

Development of a Digital Library based on Cloud Computing Model Chimdi Walter Ndubuisi,2019-01-18 Research Paper undergraduate from the year 2016 in the subject Business economics Information Management course Communication Engineering language English abstract Over the years there has been the need to improve the level of services provided by traditional libraries in the areas of resource accessibility and management This is in a bid to address the challenges and inconveniences in accessing and managing the library resources A viable means of achieving this purpose is by deployment of digital libraries In this project a digital library prototype based on cloud computing will be developed to demonstrate the viability of deploying and running cloud based digital libraries in Nigerian higher institutions to curb the challenges encountered in accessing resources in traditional libraries by providing ubiquitous access to library resources Developing the digital library will comprise of two design phases viz developing the library website and designing a local intranet on which the website will be hosted The website will be developed using web scripting and programming languages such as Hypertext Mark Up Language HTML JavaScript and Hypertext Pre Processor PHP etc while the local intranet is a network of computers and other Wi Fi enabled digital devices and a wireless access point The network will be configured and the digital library website hosted on a dedicated server which provides services to the user devices through the access point At the end of this project a prototype of cloud based digital library will be developed On the library website users can perform basic operations such as registering with the library and viewing the content of materials in the library collections While the library administrator performs functions of book uploads and user authentication This project though demonstrated as a prototype shows that deploying cloud based digital libraries in Nigerian higher institution will curb the challenges associated with traditional libraries

**Modern Technologies in Materials, Mechanics and Intelligent Systems** X.Y. Huang,X.B. Zhu,K.L. Xu,J.H. Wu,2014-10-10 Selected peer reviewed papers from the 2014 4th International Conference on Intelligent System and Applied Material GSAM 2014 August 23 24 2014 Taiyuan China

*Research EU.* ,2012-02 *Computer and Information Technology* Prasad Yarlagadda,Seung Bok Choi,Yun Hae Kim,2014-02-06 Selected peer reviewed papers from the International Forum on Computer and Information Technology IFCIT 2013 December 24 25 2013 Shenzhen China Issues in Science and Technology ,2008 **Advanced Mechanical Design** Wen Zhe Chen,Pin Qiang Dai,Yong Lu Chen,Qian Ting Wang,Zheng Yi Jiang,2012-02-27 Selected peer reviewed

papers from the 3rd international Conference on Manufacturing Science and Engineering ICMSE 2012 March 27 29 2012 Xiamen China **Advanced Materials and Engineering Materials** Sally Gao,2012-01-24 Selected peer reviewed papers from the 2011 International Conference on Advanced Materials and Engineering Materials ICAMEM 2011 November 22 24 2011 Shenyang Liaoning China *Leading Fundamental Business Change* Dominik Heinz,2014-07-30 Master s Thesis from the year 2011 in the subject Computer Science Commercial Information Technology grade 1 0 University of Applied Sciences Stuttgart language English abstract This thesis examines the nature of fundamental business changes how they affect a company and how a management team can implement the change successfully A fundamental business change is defined as affecting not only small technical or organizational niches of a department It is rather the re organization of a business as a result of the re structuring of either the entire organization or a single department It affects often repeatedly the majority of employees the majority of processes and includes a large amount of technical changes The introduction of Cloud Computing within an IT department is hereby used as an example Cloud Computing is the obtaining of IT capabilities from an external provider as a service in a pay per use manner and over the Internet This new technology changes the business of an IT department fundamentally **Rules on Digital Trade in the Light of World Trade Organization Agreements** Asif Khan,2023-12-14 Doctoral Thesis Dissertation from the year 2023 in the subject Business economics Trade and Distribution language English abstract This doctoral dissertation deals with rules on digital trade in the light of WTO agreements Digital trade has brought about profound changes in the international trade framework Traditional trade which primarily involved the exchange of physical goods has now expanded to encompass a wide range of digitally delivered services online transactions and data flows This transformation has been driven by advancements in technology and the increasing interconnectedness of the global economy The digital economy encompasses various digital technologies and platforms and has become a significant driver of economic growth and innovation It allows businesses to reach international markets more quickly and efficiently transcending geographical barriers The internet mobile devices cloud computing and artificial intelligence have facilitated this digital transformation These technologies enable seamless communication data storage and processing automation and personalised services revolutionising how businesses operate and engage in international trade Digital trade has created new opportunities for businesses of all sizes Small and medium sized enterprises have benefited from the ability to access global markets through digital platforms and e commerce These platforms provide a means for Small and medium sized enterprises to connect with potential customers worldwide establish their presence and market their products and services without needing a physical presence in foreign markets This has lowered entry barriers and empowered Small and medium sized enterprises to participate in global value chains expanding their reach and contributing to economic growth One of the notable developments in the digital trade era is the rise of platform based businesses These platforms such as e commerce marketplaces ride sharing services and online payment systems act as intermediaries

connecting buyers and sellers across borders They facilitate transactions provide infrastructure and services and enable businesses to expand their customer base globally Platforms have become influential players in international trade shaping market dynamics and redefining traditional trading system **Electronics and Information Technology Annual Report** India. Department of Electronics and Information Technology,2011 Computers and Information Processing Technologies I Prasad Yarlagadda,Yun Hae Kim,2014-06-10 Selected peer reviewed papers from the International Conference on Computers and Information Processing Technologies ICCIPT 2014 April 23 24 2014 Shanghai China **OECD Internet Economy Outlook** ,2012 OECD Information Technology Outlook 2008 OECD,2009-01-26 This 2008 edition of the OECD Information Technology Outlook analyses recent developments in the IT goods and services industries and suggests that the outlook is for constrained but continued long term growth

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