**Review of Search the Web of Things, Cloud Resource Orchestration Techniques, and Car Connected Articles**

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**Search the Web of Things:**

The topic under in this section is entitled "Searching the Web of Things State of Challenges, and solutions." The purpose of this review is to understand the technological advancement in Web of Things Search Engines (WoTSE), which bridge users and applications with the required resources. The article also presents an analytical framework to review the current status of this field.

The research on this topic has been organized into three parts: collection and analysis of data that involves 200 related academic works to build a conceptual model for WoTSE. The second part involves the development of an analytical framework based on 30 representatives [2]. The last section of this research discusses the open issues to

bridge the gap between the current and ideal WoTSE. This article's underlying taxonomy is based on the architectural

framework and analytical framework of WoTSE, which comprises different

classifications. This article's roadmap is to adopt modular development for WoTSE to facilitate better reusability of existing models. The difference between taxonomy and roadmap is that taxonomy presents a different classification of WoTSE in this research. In contrast, road roadmap bridges the gap between different taxonomy in developing a better solution.

In reviewing this article, there exist several drawbacks, which forms part of the research gaps. This paper provides a detailed overview of WoTSE and identifies the challenges in searching the things; this forms part of identifying the research gaps. The primary research gap is that the searching techniques presented may not be ideal for the dynamic nature of devices, which require an improvement in future research and developments. It is well known that devices are dynamic, but for the existing research, keyword-based searching. One of the areas that need to be focused on in future research is the nature of WoTSE; according to existing research, detecting and storing changes is an issue.

After reviewing the WoTSE article, lessons learned include is its role in bridging the gap between users and applications and resources needed for its operations. Another lesson learned is about the challenges in developing these systems due to the diverse nature of the Web of Things resources. The literature presented in this research provides an understanding of different forms of WoTSE and implementations, such as sensor search, finding an entity with a dynamic state, etc. Lessons learned in this article are good because they form a basis for future work and advancement of this research.

**Cloud Resource Orchestration Techniques**

The topic of review in this section is known as "Cloud Resource Orchestration Techniques." This review's primary goal is to provide a diverse view of cloud architecture and capabilities provided through resource orchestration. Additionally, this review provides an understanding of this framework by analyzing the art in cloud resource orchestration, concepts, models, and tools.

The research organization in this topic of the review is based on three main segments: an overview of cloud resource orchestration that typically discusses cloud resource lifecycle, cloud orchestration services, and operations. The second segment in this research is based on the topic's taxonomy, which identifies the primary dimensions, standard building blocks, and available solutions. The third segment in this research is a related review, which provides different perspectives from other authors. The author presents an analysis of resources in the fourth segment, with close attention to resource types, resource entity model, resource access, and representation notation. This research's other vital segments include evaluating this cloud framework based on its capabilities, knowledge reuse, and runtime environment. In this paper, it covers holistic taxonomies that comprise of end to end aspects of resource orchestration. Additionally, taxonomy seven essential orchestration layers include the support layer, security layer, and resource abstraction. This article provides a roadmap from virtualization to cloud computing resource orchestration.

Based on the cloud resource orchestration article review, areas that require improvement include the application of runtime intelligence for both declarative and automatic orchestration. These future improvements will play a crucial role in addressing the research gap in this cloud computing concept. Additionally, another essential future improvement in this research would be paramount in providing significant end-user-oriented capabilities for presentation, which may be implemented by diversifying resource representation techniques. Such areas include empowered declarative representation for end-user, a critical emerging category of user type for orchestration techniques, and the adoption of open standards. The research provides a detailed overview of the cloud resource orchestration technique regarding the lessons learned from this article. This paper also provides analytical skills and understanding revolving around this technique, including analyzing the cloud framework that provides a specific state of the art in cloud resource orchestration from a holistic point of view. Through the framework adopted, this paper provides more insights on empowering effective research, selecting the best cloud orchestration models, platforms, languages, and tools. Accordingly, reviewing this article has provided much understanding of this model's cloud resource lifecycle and service and operations, which is all about selection, description, configuration, deployment, and monitoring.

**Connected Car: Technologies, Issues, Future, Trends.**

The topic under review in this section is "Connected Car: Technologies, Issues, Future, Trends." This review aims to bring about an overview of the possibilities provided by connected functionalities in cars and related technological issues, challenges, and enumeration of the hardware, software solutions, and their associated features.

Notably, this research is organized into five sections. The first section provides definitions of connected ca in terms of its features and abilities. The second section of this article provides an overview of what is provided in a living-room environment of a connected car. The third section of this research relates to communication technologies, focusing on the connectivity part of the architecture. The fourth section of this research provides an overview of the floating car data, where a car collects such data through an array of sensors [1]. Another section in this research provides an overview of the deployment of autonomous cars and their features. Lastly, the research discusses the challenges of vehicle software engineering and future scenarios. In terms of taxonomy, roadmap, or timeline, this research does not detail these aspects.

This article presents a research gap. It presents details relating to the cars connected to the internet, which poses many challenges and demanding perspectives in software development and hardware design [1]. This means that the state of research keeps changing as time goes by due to the new developments. Future research needs to have some improvements in the user's experience and adaptability of vehicles to users' behavior and desires. Lastly, future research needs to have a serious effort to be extended to provide a guarantee of the security of the connected cars software and integrated hardware devices.

**Comparing and Contrasting Between 3 Articles**

In comparing and contrasting the three articles, it is essential to note that three articles are based on distinct topics. In all the articles provided, they provide challenges based on the current state of research and then provide challenges, solutions, research gaps, and future improvements. While the first article, "Web of Search Things," provides a review on understanding the technological advancement in WoTSE, which bridge users and applications with the required resources. The article also provides a presentation of an analytical framework to review the current status. On the other hand, the article "Cloud Resource Orchestration Techniques" provides a diversified view of this technique's cloud computing architecture and capabilities. Similarly, this article provides an understanding of this framework through the analysis of the state of the art in cloud resource orchestration, concepts, models, and tools.

While the WoTSE article involves analyzing 200 related materials to build a flexible conceptual model, the cloud resource orchestration technique article relies on creating prototypes within the runtime environment to understand its capabilities. Additionally, this research relies on taxonomy and survey conducted on resource orchestration techniques by reviewing primitives’ actions, orchestration strategies, language paradigm, and cross-cutting concerns of this technology, such as security rules. On the other hand, an article on car connected, technologies, issues, future trends, and trends between 2014 and 2020. Such analysis is based on software design and hardware design of the connected car

In the three articles, they present research gaps, thus creating a room for future improvements on the three research topics. In WoSTE research article, it identifies the challenges in searching the things, which forms part of identifying the research gaps. On the other hand, cloud resource orchestration paper represents research gaps, which forms part of future improvements, which will in return play a crucial role in addressing the research gap in this cloud computing concept. Lastly, in connected car article, it has presented a research gap associated to the cars connected to the internet, which poses many challenges and demanding perspectives in software development and hardware design.

**References**

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