

Engineering: emergent technologies essay examples

[Law](#), [Security](#)



Introduction

The field of engineering faces continuous change by the day. For a long time, these changes have been necessitated by varying needs of the society. At times, the needs could revolve around the need for efficiency, safety, easing the standard of living, or simply arising as a result of scarce resources. These changes have seen the society moving from traditional methods of doing things to a more modern approach. An example can be witnessed in the developments in the manufacturing engineering field. The developments and changes in the manufacturing have necessitated for the inception of efficient methods of producing goods. This resulted in a move from traditional forms of manufacturing that tended to use excess labor to automated methods aiming at making production easier. To this end, this paper aims to look into five growing engineering achievements geared towards making humanity's life resourceful. Also, the paper will dig into the details of one of the topics.

Five viable topics

In this angle, the engineering field captures the various areas ranging from manufacturing, transport, to computing. These fields have faced great changes as they grow. Some possible research topics in this field include; the use of alcohol as a fuel alternative to petroleum, the future of high speed trains, growth of 3D printing, and the developing idea of digital manufacturing. Additionally, the area of cloud computing and data has been one that has caused excitement in the computer scene. In this case, the paper will focus on cloud computing, data security and its future.

Figure 1: Cloud security

Background: Cloud Computing and data security (Cloud Security)

Therefore, the aspect of cloud computing has been one that has changed the human world. This change has been reflected by the way in which the characteristic of cloud computing has improved the computing field. However, the cloud computing scene has been faced by unpredictable challenges. These challenges have been spread by the fact that the technology is one that does not entirely depend on physical elements. Thus, for cloud computing to work, a lot of accuracy and in-depth input are required. In addition, aspects of cyber-crime have gone on to compound the technology. This is based on the fact that cloud computing relies on the usage of a central server that provides storage for users around the globe. Individuals can then access the data from different locations without having to carry their own gadgets. This sensation has allowed for the creation of a computer-generated world. At one time, the server contains a lot of sensitive data that could be misused by hateful individuals for personal gains. However, despite its efficiency, few have managed to maintain the security of the data servers. All over, there have been instances of attacks by mischievous individuals. According to a data breach investigation report published by Verizon, data theft has been on the increase. This sharp increase has been witnessed since the continued dependence on cloud computing. In particular, users of cloud computing have faced incomparable loss from attacks. An example of this is where the Chinese data security agencies lost data for 6 million users to a single hacker.

Current approaches to the issue of data security and cloud computing

Accordingly, the issue of cloud security has resulted in the development of different approaches with an aim of increasing security. Overall, cloud insecurity is sensitivity issue due to the extent that it requires greatest consideration. To this end, several firms have come up with different strict measures. One such approach is where the firms have resulted to the use of secure private clouds. In this scenario, an individual would require having internal access from the provider; as they intend to carry out malicious acts. Private clouds protect users from the public cloud.

Figure 2: The concept of private and public clouds

Additionally, the issue of cloud computing insecurity is being tackled from a legal front. The law has continuously worked to ensure harsh punishment to perpetrators of the attacks. Also, legislature covering the responsibility of cloud service providers is being developed. In this case, the law defines the extent to which a company providing the services can suffer from a client's loss. This providers include those providing credit card services and relying on the concept of cloud computing. In this scenario, providing cloud security does mean that firms do not have to provide.

In the case of technological developments, cloud computing has seen unmatched developments. One such development is the CaaS (Communication-as-a-service). This development would provide a boost to teleconferencing. Additionally, the development has been beefed up with ultimate security to provide a more secure business communication channel.

Another technological development is where various providers are working on an avenue through which individuals can access all their data from a single channel. This moves away from an instance where a user can only access data of their different providers at each occurrence.

Figure 3: Joint service provision by cloud providers

Viable solutions to cloud security

On the part of cloud security, varying methods have been put into place to protect the various users. The methods put in place range from deterrent, preventive, and corrective to those of a detective nature. The various protective methods aim at tackling the issue based on the level of weakness. Of all these methods, the detective approach is the most promising. This is based on the fact that the approach proceeds to investigate exposures and areas that require attention. After the investigation, the measure proceeds to use the best solution to the problem.

Future Developments

In an age where the world's size has been reduced by technology, the field of cloud computing is one with potential for unmatched growth. The initial setbacks arose due to the fact that there existed insignificant legislature governing the improvement of the technology. Additionally, few individuals were familiar with the workings of the technology. With the continued growth, security is achievable within a period of around 15 years. Within this period, the legislature would have been able to capture the muddy waters on cloud insecurity. Additionally, the various providers will have come up with enough avenues of protecting cloud users.

Conclusion

In conclusion, the world has continued to technologically grow. In particular, the recent times have experienced major technological jumps. In the prevailing times, one can conduct business, communicate, or explore any part of the world with simplicity. Additionally, their presence is not a must. In the case of cloud computing, individuals have been able to access their data with ease. Also, business transactions have been eased. This is based on the fact that cloud computing has reduced the previous excess gadgets required. However, the ugly head of cloud insecurity has continually threatened the supposed developments in this field. This has demanded the development of new actions aimed at limiting and controlling the situation. In short, there is no limitation to the development of cloud computing; despite the natural security issues.

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