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Article Review 10

Software Engineering for the Internet of Things

This article is centered around the Internet of Things (IoT) and its relation to the software engineering world. The IoT is a term that embraces many different types of technology and has been applied in several domains for a variety of purposes. The article begins by relating the Internet of Things to the gold rush of 1849, but instead of miners rushing for gold, it is software developers. After surveying professionals from a range of organizations, they found four key components to the IoT. Near the end of the article, five research articles involving the IoT were referenced and the key points to each were given.

The four takeaways that arose from the article’s survey were customer satisfaction, organizational aspects, variable costs, and social implications. In regards to customer satisfaction, connected devices are vital to maximizing the quality of software while also satisfying the customer’s needs. For organizational aspects, to take advantage of IoT projects organizations may need to bring in more experts for a boost in data analytics and data security. Variable costs is another aspect to be considered in the Internet of Things. Unlike the typical IT project, maintenance costs can vary considerably and at times could become very expensive. For social implications, it is still unclear how people will react to the growth of IoT devices.

After giving details about the survey, the article talks about a few of the overall impacts of the IoT. As the IoT continues to grow, a new generation of development environments will be required to support it. An example of this is development environments in the cloud. The cloud allows for incredibly large scalable verification and validation techniques such as simulation. Another impact of the IoT is that organizations will need to train a new generation of software developers. Allowing developers to create IoT applications without the proper knowledge and training is dangerous and could put companies at risk.

There were five research articles that were cited in this article. In “Key Abstractions for IoT-Oriented Software Engineering” the author highlights key abstractions in IoT engineering that could help it take a step forward. In “Model-Driven Engineering for Mission-Critical IoT Systems” the author and his co-workers talk about how technological difficulties that arise when utilizing IoT for critical systems. In “Enabling IoT Ecosystems through Platform Interoperability” the author presents an architectural model for IoT ecosystems and highlights five patterns. In “Scalable Application Design for the IoT” the author analyzes a modular approach to context-aware IoT applications and its scalability, accuracy, and complexity. Lastly, in “A Roadmap to the Programmable World: Software Challenges in the IoT Era” the authors create a roadmap from their IoT experiences.

This article allowed me to dive deeper into the Internet of Things and see what it is all about. I enjoyed this article because before today I did not know much about the IoT and its impact.