Internet of Things

Getting serious about IoT development

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IoT has the potential to transform a wide range of industries and applications, from home automat manufacturing to smart cars and connected cities. The benefits of applying IoT across these variou result of operational efficiencies. These efficiencies are achieved when the data from IoT devices, is analyzed to obtain insights that may be acted upon to save time, reduce costs, or deliver an imp

Insights provide the most value when IoT devices and the data they produce are reliable and secu these insights the data needs to be analyzed in a timely fashion. This data can be collected and int distributed devices and analyzed at scale, because small productivity gains applied thousands of t IoT system such as a connected city quickly add up.

My first two developerWorks learning paths, IoT 101: A quick-start guide for IoT developers and Ic IoT development, introduced you to key skills, concepts, and technologies for IoT development. In I'll help you tackle some of the most challenging issues that face developers: security, device mar

Security

An IoT development best practice is adopting a security-by-design. The task of securing IoT devic vast number of connected devices, the difficulty of updating devices once they have been deploye nature of the data that is collected. In addition to securing the IoT devices themselves, IoT securit data, the network, and any applications that access the devices and data, including cloud and mob developers understand the security challenges involved in developing IoT solutions and learn stra themso that they can avoid repeating common mistakes that can compromise the security of an Ic

Device management

Managing and maintaining IoT devices is a challenge, because IoT solutions mature and the scale towards thousands or even millions of connected devices. Device management is essential at ever lifecycle, including the provisioning, on-boarding, and authentication of new IoT devices. This stag and monitoring of deployed devices, including the troubleshooting and remote debugging of devic decommissioning of devices when they are retired. By automating these processes, developers ca

- Scale their IoT solutions rapidly
- Maintain consistent configurations across deployed devices
- Schedule over-the-air updates for device software to ensure that the devices continue to oper effectively, reliably, and securely

Analytics

The data produced by the IoT devices alone is of limited value. Greater value can be discovered by to gain insights and then by performing actions automatically in response. IoT device data is curre because only a small fraction of the data that is collected and stored from IoT devices is actually a analytics to the huge volumes of heterogeneous data that is captured across a range of locations a multiple data stores is a daunting task. The data likely requires filtering, normalization or transforr variable quality or reliability, or might be time-sensitive and require immediate action to get the m can be mitigated by adopting edge analytics or real-time analytics tools alongside a rules engine a automate triggering actions.

Are you ready to get serious about IoT development?

My upcoming developerWorks learning path, **IoT 301**, focuses on these key IoT development tech need to apply when getting serious about IoT development.

In the coming weeks, we will be publishing a summary of the top 10 security challenges in IoT (pu 2017), a guide to device management (published December 22, 2017), an overview of IoT data an (published December 19, 2017), and a video tutorial on applying rules and actions to IoT data (pu 2017).

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by AnnaMGerber

Website

Anna Gerber is a software engineer and maker based in Brisbane, Australia, and one of the organizers of NodeBots AU. With over 15 years of experience, Anna is currently a developer at Console Connect.

1 comment on"Getting serious about IoT development"

Aravind Krishnadeva • May 14, 2018

Dear Ms Anna Gerber. I would like to introduce myself as a lecturer who is currently working in Oman. A passionate to work on IOT systems and development. My interests include, tinkering with IOT hardware designing hardware. Outside hardware, I am keen on Node JS for embedded systems, and WSN. Currer projects as of now.

I envision myself working on IOT in a startup in the next two years. Since my experience is limited as of map for moving further from my current position. I appreciate any suggestions from your side.

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