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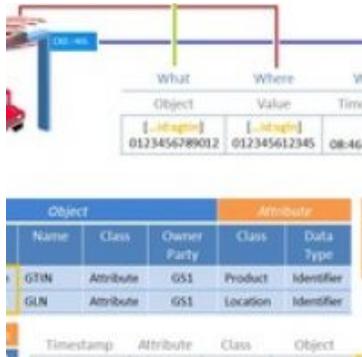
Alexa on batteries: A life-changing door just opened



Todd Mozer

Several hundred articles have been written about Amazon's new moves into Smart Glasses with the Alexa assistant. And it's not just TechCrunch, Gizmodo, The Verge, Engadget, and all the consumer tech pubs...

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DESIGN ARTICLES

Cross-industry semantic interoperability, part five: Towards a common data format and API



Victor Berrios, Zigbee, Richard Halter, ARTS, Mark Harrison, GS1,

Scott Hollenbeck, Verisign, Elisa Kendall, OMG, Doug Migliori, ControlBEAM,

John Petze, SkyFoundry, J. Clarke, Stevens, Shaw Communications

The model can define a set of object management services (similar to the IETF's Extensible Provisioning Protocol (EPP)) that are not explicitly tied to specific objects and can extend to objects across all ontology classes. While object management parallels object-oriented programming, this service model can represent a metadata abstraction from programming that is similar to concepts in model-driven development. These services can create metadata and interpret that metadata at runtime. The?

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Raspberry Pi smart home solutions



Jeremy Cook, Engineering Consultant

We've all heard of smart devices and we can see this technology filtering into our homes bit by bit. While much of this technology is costly and/or proprietary, you can build up your own smart home to your exa...

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Machine learning and Industrial IoT: Now and into the future



Dinesh Nair, Chief Architect, National Instruments

To serve target customers better than their competition, embedded design teams today are looking into new technologies such as machine learning (ML) and deep learning (DL). ML and DL allow these designers to develop...

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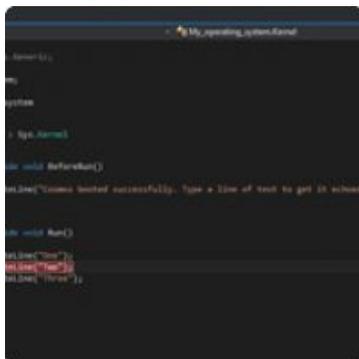


Embedded Insiders Podcast ? Machine Learning: Fact or Fiction

E Rich Nass, Embedded Computing Brand Director, and Brandon Lewis, Technology Editor

A few weeks ago, the Embedded Insiders tackled the topic of artificial intelligence and machine learning. After further review, one of the Insiders cried foul, saying that there?s nothing new here. ?It?s just the same technology with a new catchy name.? Insider B claims Insider A doesn?t know what he?s talking about; that AI and Machine Learning really are new technologies and are sure to make an impact going forward. Listen to the latest Embedded?

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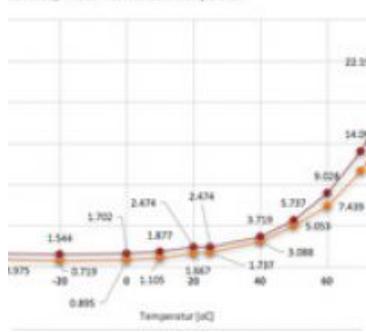


Learn from your past: Commercial RTOS or roll your own

E Colin Walls, Mentor Embedded Software Div.

Today, I am going to tell you a tale. It?s a true story of events that happened long, long ago in a land far, far away. We?re always told that we should learn from our experiences (or from our mistakes, ...

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Energy consumption in modern microcontroller systems, part 1: A benchmark for ultra-low-power



Horst Diewald and Uwe Mengelkamp, ProJoule GmbH

An important factor in the selection, market positioning, and success of a product is the energy consumption of the entire system. However, traditional approaches for expressing efficiency in microampere (uA) or mi...

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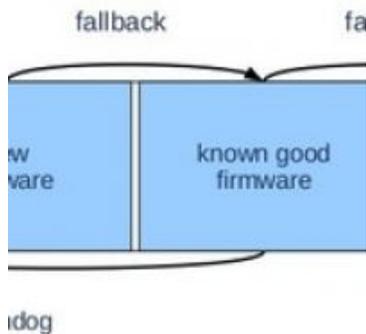
Your hardware is not secure



Craig Ramsay, University of Strathclyde

In the last few years, cybersecurity has garnered attention from all top industry folks, with companies now taking security more seriously than ever. However, hardware security is still in a niche phase. Lots of que...

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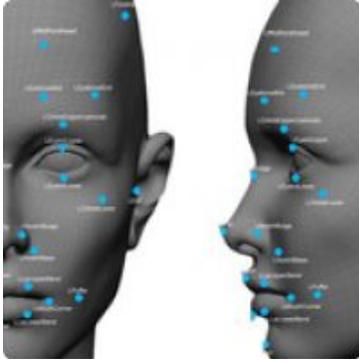
Identifying secure firmware update mechanisms and open source options for embedded Linux devices



Alex Gonzalez

The rapid growth of the Internet of Things (IoT) has triggered the appearance of billions of Internet-connected, wireless embedded devices. From medical devices to tank sensors, smart thermostats, intelligent street...

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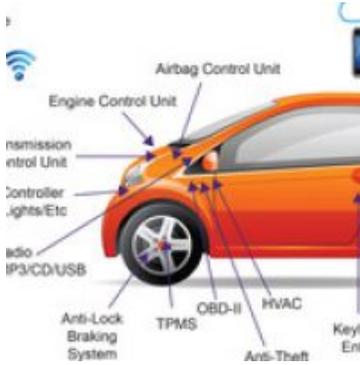
Apple erred on facial recognition



Todd Mozer

On the same day that Apple rolled out the iPhone X on the coolest stage of the coolest corporate campus in the world, Sensory gave a demo of an interactive talking and listening avatar that uses a biometric ID to kn...

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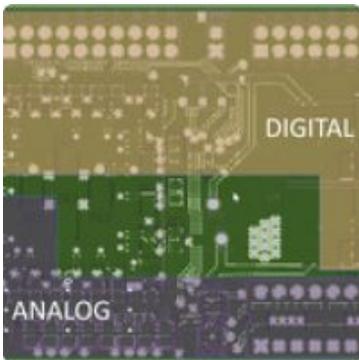
Build security into the connected car development life cycle



Mark Pitchford, LDRA

A Boeing 787 aircraft contains something like 6.5 million lines of software. Impressive, until you realize that the modern automobile, with an average of 20 million lines of code, has the airliner beat three times o...

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Guidelines for designing a printed circuit board



Yi Tang, Elecrow

Designing a circuit board is both an art and science. So what's needed to ensure a perfect design? I'll lay it out here in five steps. First, paying attention to PCB design is crucial for avoiding probl...

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AI isn't coming. It's already here.



Ray Alderman VITA Standards Organization

Now hear this: AI, or artificial intelligence, is going to take over. In fact, I could make the argument that it already has. AI breaks down to machine learning, and under that, deep learning. AI is third biggest ch...

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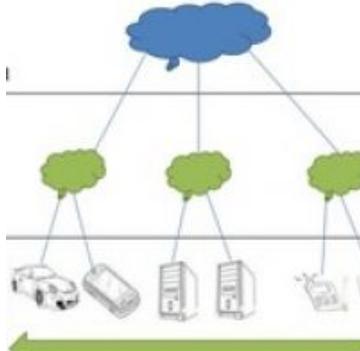
How to develop tiny solar-powered wireless sensor nodes



Eiji Fukawa, Cypress

Wireless sensor nodes promise to reduce implementation costs by reducing the size of sensors, simplifying maintenance issues, and maximizing battery life. However, even greater growth will be possible with an emphasis...

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Get ready for the coming era of fog computing



Lynne Canavan, OpenFog Consortium

The IT pendulum is again in motion, as we shift away from cloud towards a more distributed computing model. Gartner says that by 2022, 75 percent of enterprise-generated data will be created and processed outside th...

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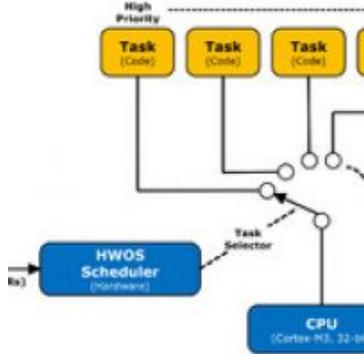
Sample project: Interfacing IoT with embedded using Node.js, part 1



Michael Schmidt, Technologic Systems

This project builds on the article 'Speeding embedded systems time to market using Node.js' by providing and showing how to implement the code for a simple web server. The web server offers the ability t...

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RTOS debugging, part 2: Your tasks need that CPU; don't starve them of it



Dr. Johan Kraft, Percepio AB

In embedded systems using multitasking, you may run into a situation where some of your tasks run slowly or not at all. This is called task starvation (the affected tasks are starved of CPU time) and it can happen f...

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A new "touch" for the modern user interface



Microchip Technology Inc.

An innovative product needs a modern user interface to meet customer expectations. An outdated user interface puts revenue at risk. The CAP1xxx, MTCH10x, and AT42QTxxxx families of turnkey touch controllers provide robust and water-tolerant touch sensing. This technology is based on Microchip's decades of experience in touch. User interfaces with push buttons have several moving parts, which significantly decrease reliability, add complexity and increase tooling costs. Microchip's touch solutions allow you to create a high-impact?

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