EMBEDDED HARDWARE FEATURE

Tear Down: Smartwatch Boasts Two Weeks on a Charge

RICH NASS, BRAND DIRECTOR

How do I know exactly which processor is inside the Garmin Forerunner 945? As you can see from the figure, I took the watch apart. As much as it pained me to do so, I had to see what was inside that allowed the watch to run so long on a single charge.

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5G NETWORKING FEATURE

The Right Hardware for 5G

DARRIN VALLIS, SENIOR DIRECTOR FIELD APPLICATIONS ENGINEERING, AMPERE

Meeting 5G’s higher performance levels requires big changes, including a new frequency band and a changed radio access network (RAN) architecture. On the heels of building out 4G LTE, carriers must now deploy an entirely new transport technology with greater complexity and significantly more hardware and software components. The rollout itself will take place on a massive scale.

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ARTIFICIAL INTELLIGENCE FEATURE

Embedded AI Algorithms ? Going from Big Data to Smart Data

DZIANIS LUKASHEVICH, DIRECTOR OF PLATFORMS AND SOLUTIONS, ANALOG DEVICES

If only data, but no background information that be described as mathematical equations, is available, then data-driven approaches must be used. These algorithms extract the desired information (smart data) directly from the sensor data (big data). They encompass the full
range of machine learning methods, including linear regression, neural networks, random forest, and hidden Markov models.

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ARTIFICIAL INTELLIGENCE FEATURE

MCUs are Changing the Face Recognition Game
RICK BYE, SR. PRODUCT MARKETING MANAGER, IOT SOLUTIONS, NXP SEMICONDUCTORS

Contrary to what you might expect, bringing facial recognition capabilities to computers doesn’t require high-end hardware. Exploiting computing power has come a long way since the mid-2000s when deep-learning pipelines began demonstrating legitimate image classification with power-intensive GPUs. But today’s embedded developers can design pipelines for efficiency and prioritize just those features most important to bringing functionality to their applications, reducing the processing power needed.

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DEVELOPMENT TOOLS AND OPERATING SYSTEMS FEATURE

Transformative AI Processing Solution for Video Analytics at the Edge
RAJINDER CHEEMA, SOCIONEXT AMERICA

Realizing the full potential of smart applications, especially those involving video, requires quick processing at the edge. Having data processed locally using smart devices translates into significant cost reductions and energy efficiency. It also offers faster
DEVELOPMENT KIT FEATURE

Options for NVIDIA Jetson AGX Xavier 8GB: Projects Now That This Module Is No Longer Available

ROB CALLAGHAN, DIRECTOR OF TECHNICAL SERVICES, CONNECT TECH INC.

NVIDIA recently announced that the Jetson AGX Xavier 8 GB module is being replaced by the newest member of the platform: The Jetson Xavier NX. In response, anyone currently using or designing projects for the AGX Xavier 8GB will need to plan a new revision or re-think their designs.

What options are available to AGX Xavier 8 GB users?

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Make Your Factories Smarter By Harnessing Industry 4.0

KEYSIGHT TECHNOLOGIES

The Internet of Things (IoT) is changing the way industries handle procurement, processing, distribution of materials, and their final products. The introduction of intelligent sensors, mission-critical communications, and automation into the manufacturing environment ushers in a fourth industrial revolution: Industry 4.0. Learn how to enable a new era of manufacturing intelligence with Industry 4.0.

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EMBEDDED EXECUTIVES PODCAST

Special COVID-19 Edition of Embedded Executives: Stefan Skarin, CEO, IAR Systems

RICH NASS, BRAND DIRECTOR

A pandemic by definition means something that’s global. I decided to check in with a different part of the world. In this Special COVID-19 Edition of Embedded Executive, I spoke to Stefan Skarin, the CEO of IAR Systems, who lives and works in Sweden.
EDGE COMPUTING FEATURE

Computing at the Edge Needn’t Be Problematic

RICH NASS, BRAND DIRECTOR

While the reasons for moving your compute engine to the Edge are obvious, the methodology is not always so. That’s changing, thanks to solutions like Cypress Semiconductor’s IoT AdvantEdge.

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DEVELOPMENT KITS NEWS

NVIDIA Releases Jetson Xavier NX Developer Kit with Cloud-Native Support

TIERA OLIVER, ASSISTANT EDITOR

Powered by the NVIDIA CUDA-X accelerated computing stack and Jetpack SDK, which comes with NVIDIA container runtime, the Jetson Xavier NX developer kit combines a reference module and carrier board with a full Linux software development environment.

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How to Avoid Common Pitfalls in MISRA Compliance

GRAMMATECH

MISRA C is a standard developed by the Motor Industry Software Reliability Association, and aims to foster safety, reliability, and portability of programs written in ISO C for embedded systems.

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POWER ELECTRONICS NEWS

Analog Devices Releases Dual Silent Switcher Series

PERRY COHEN, ASSOCIATE EDITOR

The silent switcher series is based on the Silent Switcher 2 architecture, coupled with spread spectrum frequency modulation. Per the company, this ensure PCB layout
robustness to achieve ultra-low EMI performance that meets CISPR25 emissions.

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Accelerating Automotive Software Safety with MISRA and Static Analysis
GRAMMATECH

The MISRA C/C++ coding guidelines came about due to concern for safely using the programming language in critical automotive systems. Since its inception in 1998, it has become one of the most used coding standards in the automotive industry; and the application has spread to other safety-critical devices in medical and industrial control.

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Enhancing Code Reviews with Static Analysis - GrammaTech
GRAMMATECH

Code reviews (or inspections) are a proven, effective way to reduce defects in software projects. In fact, defect removal rate due to code reviews can be as high as 75%, meaning two thirds of all bugs are removed during code review as part of the development phase of a project.

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Easing Adoption of Static into Existing Projects
GRAMMATECH

The adoption of any new tool into an existing Software Development Process with an established code base is always a challenge. Static analysis tools are no different but there are steps to take to make the transition easier and smooth the introduction of these tools into an existing workflow.

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Teams are continuously trying to improve their tools, methodologies and processes, and this is where DevOps has sprouted from, the combination of software development and systems operations to make sure that software development is not done in a vacuum, but in combination with the teams that operate these systems in the real-world.

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Recognizing the need for more robust security in medical devices, the FDA issued its guidance on managing cybersecurity in 2014. But the growth of wireless, networked, and internet-connected devices means that medical devices are more at risk than ever before.

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This is a comprehensive compilation of articles on the fundamentals of building a test system.

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