The Embedded Muse 59

Useful Book Now On-Line

William Press's Numerical Recipes in C is now available in PDF form on the web. Check out: http://lib-www.lanl.gov/numerical/bookcpdf.html

While not specifically targeted at the embedded designer, it does contain many algorithms useful in building instrumentation and other systems. Lots of goodies on subjects like solving linear equations, interpolation, and evaluating functions. There's a great discussion of CRCs, as well as Huffman coding and gray codes. A recommended resource.

Academia

For the last year or so I've been teaching an embedded systems class at the University of Maryland. It's an eye-opening and rewarding experience that I think many working engineers should try.

Apparently colleges now have trouble attracting teaching talent, especially folks with real-world, practical experience. The result – too many classes taught by graduate students who really know little about the subject and have poor teaching skills.

Last semester I split my class into two groups of four students each. Their mission: make a toy car autonomously rove the engineering building's hallways, using sonar to avoid the walls and obstacles.

Rabbit Semiconductor kindly donated their Rabbit development kits; the groups put these 8 bit microprocessor boards on the cars. They interfaced the computer to the car's motor and steering gear. Polaroid's sonar kits created an acoustic pulse and detected the echo; the students tied the echo to an interrupt input and used timers to figure elapsed interval and thus distance. They mounted the sonar transducer on a computer-controlled servo to let them sweep the path ahead and on each side.

I could preach the importance of helping students for various noble reasons. But you just can't imagine how much FUN it was to chase these cars around the halls. Sure,

sometimes they crashed, and sometimes wandered into classrooms unexpectedly. The astonished looks on the faces of other folks in the building was priceless!

I highly recommend the teaching experience to you engineers. The students are engaged, attentive and interested. It's surprising – and rewarding – to see how many keep in touch even after graduating.

If you've spent a career building things rather than gathering degrees the lack of proper academic credentials causes the administrative folks no end of consternation. It is fun to be called "professor", though. The first time I was addressed as "Professor Ganssle" the Pepsi I was drinking went shooting out of my nose…

Thought for the Week

Maybe you saw this a few years ago – a short video clip (purported to be taken by a security camera) of a beefy professional-looking person seated in front of his keyboard. He gets angry. Really angry. First a frustrated BANG on the keyboard. Then he smashes the monitor with the keyboard. Then…, well, this is a guy with real anger management challenges.

Turns out the video was staged, but it's still funny. Check out http://rigaut.home.cern.ch/rigaut/badday.html to see the video itself and for an explanation of the hoax.

About The Embedded Muse

The Embedded Muse is an occasional newsletter sent via email by Jack Ganssle. Send complaints, comments, and contributions to him at jack@ganssle.com.

To subscribe, send a message to majordomo@ganssle.com, with the words "subscribe embedded *your-email-address*" in the body. To unsubscribe, change the message to "unsubscribe embedded *your-email-address*".

The Embedded Muse is supported by The Ganssle Group, whose mission is to help embedded folks get better products to market faster. We offer seminars at your site offering hard-hitting ideas - and action - you can take now to **improve firmware quality and decrease development time**. Contact us at info@ganssle.com for more information.

The Ganssle Group, www.ganssle.com