



Fast and Effective Embedded Systems Design: Applying the ARM mbed

By Rob Toulson, Tim Wilmshurst

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Fast and Effective Embedded Systems Design is a fast-moving introduction to embedded system design, applying the innovative ARM mbed and its web-based development environment. Each chapter introduces a major topic in embedded systems, and proceeds as a series of practical experiments, adopting a "learning through doing" strategy. Minimal background knowledge is needed. C/C++ programming is applied, with a step-by-step approach which allows the novice to get coding quickly. Once the basics are covered, the book progresses to some "hot" embedded issues – intelligent instrumentation, networked systems, closed loop control, and digital signal processing.

Written by two experts in the field, this book reflects on the experimental results, develops and matches theory to practice, evaluates the strengths and weaknesses of the technology or technique introduced, and considers applications and the wider context. Numerous exercises and end of chapter questions are included.

- A hands-on introduction to the field of embedded systems, with a focus on *fast* prototyping
- Key embedded system concepts covered through simple and effective experimentation
- Amazing breadth of coverage, from simple digital i/o, to advanced networking and control
- Applies the most accessible tools available in the embedded world
- Supported by mbed and book web sites, containing FAQs and all code examples
- Deep insights into ARM technology, and aspects of microcontroller architecture
- Instructor support available, including power point slides, and solutions to questions and exercises



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Editorial Review

Review

"The authors address a wide range of topics, including digital and analog input and output, interrupts, LCDs, and digital signal processing. The book provides deep insights into computer architecture, memory management, and input/output processes...Overall, this is a great book for computer hobbyists, embedded systems engineers, and students." --**ComputingReviews.com, October 2013**

"Toulson...and Wilmshurst...explain how to program circuits on ARM's mbed microprocessor-based hardware platform and provide instructions for building a digital-to-analog converter, serial data links, and a liquid crystal display." --**Reference and Research Book News, February 2013**

From the Back Cover

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Unique features include:

Instructor support available, including power point slides, and solutions to questions and exercises
About the Author

Rob Toulson is Professor of Creative Industries at the University of Westminster. He holds a PhD in the field of digital signal processing (awarded by Anglia Ruskin University in 2004) and a first degree in Mechanical Engineering from Loughborough University (1999). Rob has a number of year's industrial experience in digital signal analysis, control systems design, rapid prototyping, and model based design, as well as commercial experience in sound engineering and music production. His main focus is now in developing collaborative research between the technical and creative industries.

Tim Wilmshurst is the author of Designing Embedded Systems with PIC Microcontrollers. He has been designing embedded systems since the early days of microcontrollers. For many years this was for Cambridge University, where he led a development team building original systems for research applications - for example in measurement of bullet speed, wind tunnel control, simulated earthquakes, or seeking a cure to snoring. Now he is Head of Electronic Systems at the University of Derby, where he aims to share his love of engineering design with his students. Users Review**From reader reviews:**

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