

Raspberry Pi GPU Audio Video Programming

By Jan Newmarch

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Delve into the Broadcom VideoCore GPU used on the Raspberry Pi and master topics such as OpenGL ES and OpenMAX. Along the way, you'll also learn some Dispmanx, OpenVG, and GPGPU programming.

The author, Jan Newmarch bumped into a need to do this kind of programming while trying to turn the RPi into a karaoke machine: with the CPU busting its gut rendering MIDI files, there was nothing left for showing images such as karaoke lyrics except for the GPU, and nothing really to tell him how to do it.

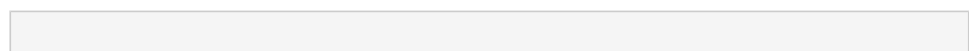
Raspberry Pi GPU Audio Video Programming scratches his itch and since he had to learn a lot about RPi GPU programming, he might as well share it with you. What started as a side issue turned into a full-blown project of its own; and this stuff is hard.

What You'll Learn

- Use Dispmanx and EGL on Raspberry Pi
- Work with OpenMAX and its components, state, IL Client Library, * * Buffers, and more on RPi
- Process images and video on RPi
- Handle audio on RPi
- Render OpenMAX to OpenGL on the RPi
- Play multimedia files on the RPi
- Use OpenVG for text processing and more
- Master overlays

Who This Book Is For

You should be comfortable with C programming and at least some concurrency and thread programming using it. This book is for experienced programmers who are new or learning about Raspberry Pi.



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Editorial Review

About the Author

Jan Newmarch is Head of ICT (Higher Education) at Box Hill Institute, Adjunct Professor at Canberra University and Adjunct Lecturer in the School of Information Technology, Computing and Mathematics at Charles Sturt University. He is interested in more aspects of Computing than he has time to pursue, but the major thrust over the last few years has developed from user interfaces under Unix into Java, the Web and now into general distributed systems. Jan has developed a number of publicly available software systems in these areas. Right now, he is looking at sound for Linux systems and programming the Raspberry Pi's GPU.

Users Review

From reader reviews:

John James:

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