

Make: FPGAs: Turning Software into Hardware with Eight Fun and Easy DIY Projects

By David Romano

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What if you could use software to design hardware? Not just any hardware--imagine specifying the behavior of a complex parallel computer, sending it to a chip, and having it run on that chip--all without any manufacturing? With Field-Programmable Gate Arrays (FPGAs), you can design such a machine with your mouse and keyboard. When you deploy it to the FPGA, it immediately takes on the behavior that you defined. Want to create something that behaves like a display driver integrated circuit? How about a CPU with an instruction set you dreamed up? Or your very own Bitcoin miner You can do all this with FPGAs.

Because you're not writing programs--rather, you're designing a chip whose sole purpose is to do what you tell it--it's faster than anything you can do in code. With *Make: FPGAs*, you'll learn how to break down problems into something that can be solved on an FPGA, design the logic that will run on your FPGA, and hook up electronic components to create finished projects.

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Editorial Review

About the Author

David Romano founded Tri-Tech Pathways Inc. to bring STEM education to students with a real-world industry perspective. He is a proven technical leader whose engineering career has spanned over twenty-five years and multiple High-Tech companies, including Raytheon, Motorola, HP, Intel and two start-up companies. He is also the co-author of multiple technology patents and he is currently the president and CEO of Tri-Tech Pathways Inc.

David is currently pursuing a doctorate degree in education as part of Intel's Tuition-for-Teaching grant. He holds a BS in Electrical Engineering and a MA in Theology. He is actively involved in STEM advisory and teaching roles. He is also active member of the International Society for Technology in Education (ISTE) and the Computer Science Teachers Association (CSTA).

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