Wilson Ryan

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wilsonryan.com

Education

Purdue University
B.S. Electrical Engineering, graduating May '16

Relevant coursework
Digital Signal Processing, ASIC Design, Digital Systems and Design, Signals and Systems, Semiconductor Devices, Microprocessor System Design, Probabilistic Methods, Noise Control, Linear Circuit Analysis

Skills

Printed Circuit Board layout and design
Embedded systems design and debugging
Experience with ARM development
Linear circuit analysis and design
Experience with DSP in MATLAB
Strong knowledge of many DSP concepts and practices
Experience with electronics measuring equipment
Extensive experience designing and modifying analog and digital audio circuits including drum machines, oscillators, guitar pedals, amplifiers, mixers, microphones, voltage controlled filters, and speakers

Languages / Software
C/C++ / ASM / Verilog / MATLAB / Python
Altium Designer / EagleCAD / GIT / SVN / CoIDE
Pro Tools / Digital Performer / Reason / Bitwig

Experience

Hardware Designer, BoilerMake Badge
2015-Present
Designed circuit and routed PCB for wireless embedded Linux system in Altium
Practiced length matching and signal analysis for DDR2 traces
Designed for manufacturing 650 boards
Utilized and hand soldered wide variety of components including BGAs and Dual Row MLF packages

Audio Engineer Freelancing
2006-Present
Designed electronic circuits for new instruments, effects processors, guitar pedals, amplifiers
Utilized I2S for sound generation with DACs
Recorded and engineered songs in a variety of settings
Acted as mixing engineer for local musicians
Learned collaboration techniques and many team skills
Helped raise money for a number of local and national charities

Chief Engineer, Kelly Nursery LLC
2011-2014
Designed and managed electronically automated irrigation systems
Designed a portable fertilizer injector
Troubleshooted implemented systems

Personal Projects

Digital Synthesizer "totallySynth"
February-March 2015
Designed circuit and routed PCB for digital synthesizer dev-kit in EagleCAD
Featured ATmega32U4 "oscillator" with analog voltage controlled low pass filter
Designed, built, and assembled in one month

Digital Drum Machine "TR-362"
April 2015
Designed in two weeks for microcontrollers class (ECE 362) using HC9S12 (Freescale)
Featured 4 drum sounds and 8 step sequencer with tempo control
Used PWM for 8 kHz sound generation