

David Wykes

Electrical/Software Engineer - Penn State

Royersford, PA - Email me on Indeed: [indeed.com/r/David-Wykes/b15b439ff34cc782](https://www.indeed.com/r/David-Wykes/b15b439ff34cc782)

Authorized to work in the US for any employer

WORK EXPERIENCE

Electrical/Software Engineer

Penn State - Warminster, PA - September 2010 to Present

- Extensive experience designing and implementing microcontroller software in C/C++ for various embedded platforms, including: ARM based processors, Atmel microcontrollers, and NIOS softcore processors
- Extensive experience in Visual Studio developing C# based terminal programs and graphical user interfaces to test, verify and monitor prototype systems
- Experienced in developing Verilog FPGA logic using Quartus II and Xilinx ISEs
- Extensive experience with in-circuit emulation tools for Atmel Studio, Visual Studio and NIOS II EDS
- Experienced in simulating and debugging FPGA logic designs using ModelSim
- Extensive experience in communication protocols including, SPI, I2C, UART, USB
- Knowledgeable with advanced interfaces, including Ethernet and PCIe interfaces
- Proficient in Altium Designer tools to create circuit schematics, board layouts and build- to-print packages for new circuit board designs
- Developed extensive MATLAB processing tools to read in, parse and produce detailed reports of testing data
- Assembled electronic products using advanced soldering techniques for through-hole, surface mount, fine-pitch components and ball-grid arrays
- Tested and debugged prototypes using standard lab equipment, including but not limited to: oscilloscopes, multi-meters, power supplies, logic analyzers, and spectrum analyzers
- Created detailed documentation of project specifications, hardware and software implementations, and end-user user manuals
- Collaborated with senior engineers concerning objective feasibility and timeline construction for various projects
- Supported on-sight system level integration of new prototypes and addressed sponsor concerns
- Manufactured cable harnesses and circuitry for specialized projects
- Obtained a secret clearance for classified government projects

Machinist

Lederer Motors - Pottstown, PA - 2006 to 2008

- Constructed and developed engines costing upwards of \$5,000
- Operated various machinery for fabrication of precise parts: pistons, connecting rods and engine blocks
- Operated machines including, but not limited to: Bridgeport, lathe, grinders
- Designed new parts using Autodesk Inventor and Dassault Systèmes Solidworks

EDUCATION

Bachelor of Science in Electrical Engineering

Drexel University - Philadelphia, PA
June 2013

SKILLS

Embedded Programming (5 years), PCB Design, Layout and Debugging (3 years), C# (5 years), Matlab (6 years), C (4 years), FPGA Logic Design (2 years), In-Circuit Debugging (5 years)

ADDITIONAL INFORMATION

Technical Strengths

- Platforms: PC, Altera FPGAs/SoCs, Xilinx FPGAs, Atmel Microcontrollers
- Software: Altium Designer, Quartus II, Xilinx ISE Design Suite, MATLAB, Atmel Studio 6.2, Visual Studio [...] LabVIEW, Eclipse, Microsoft Office Suite, Microsoft Visio, Autodesk Inventor, Dassault Systèmes SolidWorks, AutoCAD 2010, PSpice Schematic Capture and Simulation, ModelSim, LTSpice
- Languages: C#, C++, C, MATLAB, Visual Basic .NET, Java, Verilog

- Operating Systems: Windows [...] Linux

Senior Design Project

Shape Memory Alloy Massaging Sleeve, Philadelphia, PA

Group Member, September 2012 to May 2013

- Designed C# based graphical user interfaces to control and monitor sleeve behavior
- Developed embedded C software for Arduino microcontrollers
- Developed C# software for interfacing with National Instruments data acquisition devices
- Created MATLAB scripts for processing and plotting experimental data
- Characterized the behavior of the shape memory alloy, Flexinol, using various sensory equipment, including force sensors and transducers
- Tested and debugged the control circuitry using standard lab equipment, including but not limited to: oscilloscopes, multi-meters and data acquisition modules
- Assembled various electronic components using basic soldering techniques
- Documented and reported experimental findings to fellow engineers and professors