

Devin Ivie

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www.linkedin.com/in/devin-ivie-engineer

SOFTWARE ENGINEER

Adaptable Electrical Engineer with six years of experience in software, hardware and firmware design. Proven ability to learn concepts and implement into a working product that completes design requirements.

Areas of Expertise

- C#
- Xamarin Forms
- Git
- Python
- SQLite
- Network Communication
- WPF
- Microsoft SQL
- Rest API

Professional Experience

JT4 LLC | Las Vegas, NV

June 2015 – Present

Electrical Engineer III (Oct. 2018 – Present)

Electrical Engineer II (June 2015 – Oct. 2018)

- Designing large data collection system
 - C# .NET 5.0/ WPF based Windows applications to handle data flow and hardware control
 - Raspberry Pi controlling USB power sensors and transmitting collected data
 - Using MSSQL to store data in relational database
 - FPGAs used to handle high speed signals to sensors
 - Using RabbitMQ with JSON payloads as the medium to handle data collection and device control
- Designed several TCP socket control applications
 - C# - Control system of RF components with status readback and control
 - C# and Python - Control individual high power RF output components and signal generators
- Programmed STM32 Microcontroller to be TCP interface to FPGA
 - Microcontroller uses dedicated Ethernet IC to handle TCP/IP stack
 - Microcontroller communicates to FPGA using 4 wire SPI interface
 - SCPI protocol used for TCP communication
- Model-View-ViewModel (MVVM) design pattern is followed whenever possible
- Using Azure DevOps for source control and high-level documentation
- Projects are worked mostly individually with input and guidance from teammates
- Wiki based documentation practices
- Generate user guides for software and APIs
- Generate documentation for hardware designs
- Program FPGAs using Xilinx Vivado IDE utilizing Verilog and VHDL
- Use STMCubeIDE to program STMicroelectronics microcontroller for TCP, SPI, UART and I²C communication as well as display control with code written in C

ACSS (L-3 COMMUNICATIONS) | Phoenix, AZ

May 2014 – Jan. 2015

Hardware Engineer Intern

- Designed an automated test procedure to increase speed and reliability of hardware functionality tests
- Designed Graphical User Interface for testing hardware using C++ in LabWindows IDE
- Decided requirements and expectations for rack and test software
- Participated in design reviews for hardware and software designs
- Fixed long-standing problem with loading bit files into FPGA
- Implemented requirements and relayed information to engineering team and management
- Designed layout for rack containing all test instrumentation and connections
- Debugged every step of design, build and validation of software and hardware
- Attended meetings to provide updates to management about the project status
- Learned in-depth information of electrical components on PCBs

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Professional Experience, cont.

ARIZONA STATE UNIVERSITY | Tempe, AZ

Sept. 2014 – Dec. 2014

Graduate Research Assistant

- Performed research on radar and radar detection methods
- Performed research on communication systems
- Programmed a simulation in MATLAB for a Joint Radar/Communications system based off ideas in a dissertation paper
- Attended regular meetings to discuss project-related progress
- Wrote research paper explaining research and results from simulations

Education

Master of Science in Engineering (M.S.E.); Electrical Engineering (2015)

Arizona State University, Tempe, AZ

Bachelor of Science in Engineering (B.S.E.); Electrical Engineering (2014)

Arizona State University, Tempe, AZ

Technical Skills

Design Software: Visual Studio, VSCode, Microsoft SQL Management Studio, STMCubeIDE, Xilinx Vivado, Wireshark, Anaconda Python, Altium Designer, SolidWorks, Autodesk Fusion 360, MATLAB, Omron Sysmac Studio, Hyper-V

Operating Systems: Windows, Ubuntu, Raspberry Pi OS

Programming Languages: C#, Python, VHDL, Verilog, C, MATLAB

Markup and Serializations: XAML, JSON, XML

Hardware: Xilinx FPGAs, STM32 Microcontrollers, Raspberry Pis, Omron Motors

Lab Tools: Oscilloscopes, Digital multi-meters, Signal Analyzers, Signal Generators, Soldering Station, Power Meters

Home Projects / Self-Improvement

Xamarin Forms Personal Budget App – Tracks bills due, manual bank account entries, paycheck expense calculations.

Currently using C# and SQLite for backend, Xamarin Forms (XAML) for front end and MVVM design pattern to make this application cross platform. Works on both iOS and Android.

Custom Wine Fridge App – Connects to Web API or BLE API hosted on ESP32 to manage wine fridge controls. Currently using C# and RestClient for backend, Xamarin Forms (XAML) for front end and MVVM design pattern to make this application cross platform. Works on both iOS and Android.

Modified Wine Fridge – Recreating control unit on a small wine fridge to add Wi-Fi and BLE controllability. Designed new circuit board fitted with microcontroller which will provide remote access to temperature and humidity data via webpage and/or REST API. Xamarin Forms application design to control hardware over Wi-Fi and setup over BLE works on both iOS and Android.

Personal Assistant – Created Android-only application to listen for wake words then voice commands. Application uses Xamarin and C# and is able to control remote hardware using REST API.