Scott W Harden

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Research scientist with 14 years of experience developing data analysis and visualization software for scientific, industrial, and biomedical applications. With advanced degrees in neuroscience, biotechnology, and dentistry, my interdisciplinary experience enables me to develop innovative solutions at the intersection of science, medicine, and technology.

TECHNICAL SKILLS

Primary Languages: C# / .NET, Python
Additional Experience: ASP.NET Core, AVR, Azure, Blazor Server, Blazor WebAssembly, C, C++, CSS, Docker, ESP32, Git, HTML, ImageJ, Java, JavaScript, KiCad, Linux, SPICE, MATLAB, OriginLab, PHP, React, SQL

EXPERIENCE

Research Scientist (2018-present) University of Florida
- Designed and implemented advanced domain-specific software to analyze and visualize complex electrical and optical data using a variety of technologies including C#, C/C++, Python, ASP.NET, Blazor, and JavaScript
- Created and maintained automated data analysis workflows used by over 30 scientists
- Trained and mentored more than 20 PhD students overseeing complex multi-year scientific projects
- Supported projects resulting in over 10 primary and co-author publications in scientific journals

Software and Embedded Systems Developer (2018-present) Harden Technologies, LLC
- Developed custom software and hardware solutions for clients typically involving data visualization, automated analysis and report generation, and/or embedded biomedical device design and prototyping

Pre & Postdoctoral Researcher (2007-2009, 2012-2018) University of Florida & University of Central Florida
- Developed application-specific software to enable automated analysis of 2D and 3D microscopy data
- Supported projects resulting in 16 primary and co-author publications in scientific journals

PROJECTS

- **ScottPlot** - .NET package for data visualization with 1.8M installs, 5.4k GitHub stars, used in 1.9k GitHub projects
- **PyABF** - Python package for signal analysis of electrophysiology data, continuously maintained for over 7 years
- **LJPcalc** - Blazor WebAssembly application for calculating liquid junction potential referenced in over 50 publications
- **QRSS Plus** - Cloud native web app for visualizing radio frequency spectrograms continuously maintained since 2013
- **FftSharp** - .NET package for calculating the fast Fourier transform (FFT) of real and complex datasets
- **Spectrogram** - .NET package for performing time-domain frequency analysis of audio and radio frequency signals
- **FSKView** - Desktop application enabling real-time monitoring of ultra-narrowband frequency shift keyed radio signals
- **USB Counter** - Embedded device for precision frequency measurement and pulse counting with a USB interface
- **Portfolio** - Additional hardware and software projects with links to source code and demos that run in the browser

EDUCATION

- Doctor of Philosophy, Biomedical Science (2016) University of Florida, Gainesville, Florida
- Doctor of Dental Medicine, Clinical Dentistry (2016) University of Florida, Gainesville, Florida
- Master of Science, Biotechnology (2009) University of Central Florida, Orlando, Florida