Jason Silic

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Summary

A graduate of the University of Nevada, Las Vegas with a master's degree in electrical engineering focusing on both digital and analog IC design. Strong software skillset with over six years professional experience in desktop and embedded software development (in addition to side projects such as the JavaScript game available at the above website). Highlights include work on an embedded C/C++/Qt system (drivers for serial interfaces, flash memory management, firmware update, optimizations) and associated tooling, a GUI/database application for the medical field, and a senior design project culminating in a functionally complete CPU chip and test board.

Education

University of Nevada, Las Vegas, Fall 2018 - Fall 2020
Master of Science in Electrical Engineering
GPA: 3.64. Thesis: "Design and fabrication of a 6-bit current-mode ADC for LIDAR and highspeed applications."
University of Nevada, Las Vegas, Fall 2010 - Spring 2015
Bachelor of Science in Electrical Engineering
GPA: 3.95. Graduated Magna Cum Laude with minors in Computer Science and Mathematics. Senior project: "Compact Integrated Processor."

Employment

Electrical Engineer working on embedded software for Thermo Fisher Scientific (July 2021-January 2024)
Developed software (embedded C) for a new hardware board. This included developing drivers for serial interfaces, optimizing the firmware update process, and developing extensive test cases for design verification. Resolved hardware and software issues with oscilloscopes, extensive debug logs, and datasheet analysis. Supported team with tooling written in Python and Qt. Helped improve existing touchscreen embedded system (Yocto Linux OS with C++/Qt).

Research & Teaching assistant at UNLV (Fall 2018-Fall 2020)
Taught undergraduate circuits and electronics labs. Worked on research projects for Dr. R. Jacob Baker including complete layout of a simple SPI interface in the Tower 180nm BiCMOS process.

Software engineer at Ec2 Software Solutions (May 2015-January 2019)
Developed desktop/database applications in the nuclear medicine field using C++, C#, MySQL, and Git. Activities included code review, customer support, and designing custom software to meet contract requirements.

Selected Projects

Database editor utility (2022-2023)
Support team by developing a GUI tool written in Qt/C++ to allow easy configuration of control parameter database for an embedded system. Editor includes visual display features (QChartView), export, and verification functionality.

Compact MIPS-style processor with integrated SRAM (May 2015)
Senior design project involving the design and layout of a CPU on the C5 process using Cadence Virtuoso software. The chip included a 512-byte SRAM for program and variables and an ALU with addition, subtraction, bitwise logical, and comparison operations. The chip worked correctly when tested on a custom PCB designed using Altium.

SPI interface including data registers (Spring 2020)
RA project involving the layout of registers and logic for an SPI interface. Learned how to shield high speed signals and optimize bus layouts to achieve a compact design. Required to understand schematics to explain operation to other members of the team.

Additional Skills

Software tools and languages: C++, C, Qt/QML, Python, Tkinter, C#, PHP, Javascript, MySQL, SQLite, Visual Studio, MPLAB X IDE, Git, Qt Creator, make files, hex files.
Embedded Hardware: ADCs, IO Expanders, Opto-couplers, RS-485, SPI, I2C, UART.
Circuit design and simulation software: LTSpice, Cadence Virtuoso (Layout, Schematic capture, LVS, DRC, Skill), MATLAB, Altium Designer, PCB123.
Other: Microsoft Word, PowerPoint, Excel, draw.io, Confluence, GIMP.