Mark H. Patten

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QUALIFICATIONS:

- Extensive experience in electronics, programming, and scientific fields
- Extensive experience in real-time programming of DSP processors/microcontrollers
- Fluent in coding in C and C++
- Experience with Embedded Linux and many RTOS
- Experience in DSP, algorithmic development, RF design, electronic design, and systems integration

INSTRUMENTATION AND TECHNICAL SKILLS:

- Languages: C/C++, Python, Verilog, VHDL, HTML, QtWidgets
- Processors: TI TMS320, ARM, Microchip, Infineon, Altera, Analog Devices, XILINX
- Simulation Tools: LabView, Simulink, MATLAB, Eclipse, Quartus, Vivado
- Development/Testing Tools: Vector Canoe, Wireshark, Veristand, Teststand

RELEVANT EXPERIENCE:

Programmer: **March 2023–January 2025**
General Dynamics Land Systems, Sterling Heights, MI

- Performed as CSCI Lead for software development group tasked with maintaining embedded code base for power control module used in armored vehicle.
- Developed and maintained code base to implement vehicle functions, including reading analog inputs, performing functions including DSP and filtering, controlling low- and high-power outputs, and communicating via CAN bus (J1939) and Ethernet interface.
- Tested and evaluated code on vehicle test apparatus using Labview/Veristand/Teststand.
- Coordinated team code development efforts by assigning tasks and maintaining task tracking databases (using VIPER, DOORS, and other tools).
- Supervised code base releases including SVN version control, merging team code development efforts, performing software scans, running automated FTP/FTR, and submitting software change request documentation to meet QA and contracted requirements.

Programmer: **July 2022–October 2022**
Harris Corporation, Rochester, NY

- Maintained Embedded Linux code base for Falcon IV software defined radio

Test Engineer: **July 2020–March 2022**
Boeing Corporation, Huntsville, AL

- Integrated and maintained test equipment for Space Launch System ground support electronics
- Developed and maintained LabView and MATLAB/Simulink applications to simulate Space Launch System ground support electronics

Programmer: **May 2007–July 2020**
Tektron Micro Electronics, Hanover, MD

- Developed embedded microcontroller code for RF systems in C and C++
- Developed FPGA designs to implement DSP algorithms for error correction, audio signal processing, and RF modulation/demodulation
- Created Windows-based applications for controlling RF systems via Ethernet and USB interfaces
- Created LabView applications for automated testing of RF systems
- Created MATLAB/Simulink simulations for testing RF modulation/demodulation algorithms

Hardware Engineer: **January 2020—April 2020**
Curtiss-Wright Defense Systems, Ashburn, VA

- Tested FPGA implementation of algorithms for CameraLink products

Electrical Engineer: **July 2019—December 2019**
Digital Global Systems, McClean VA

- Developed DSP algorithms for geolocation of signals using MATLAB
- Implemented geolocation algorithms into software defined radio

Test Engineer: **May 2017–December 2019**
GE Healthcare, Laurel, MD

- Developed LabView applications for automated test system
- Wrote documentation for test system qualification

Electrical Engineer: **December 2015–May 2016**
Fraser Optics, Kensington, MD

- Developed prototype Fraser product: Gyro-stabilized, two-camera (TV and IR camera), pan/tilt capable, touch-screen and joystick controlled display system, intended for mounting on light military vehicles
- Created Windows-CE based application for above-mentioned prototype system
- Implemented consumer based electronic boards and custom created electronics in development of above-mentioned prototype system
- Performed all engineering and project management functions in development of prototype system

Programmer: **November 2012–December 2012**
General Dynamics Robotic Systems, Westminster, MD

- Developed plans for upgrade of armored vehicle network system from CAN to GB Ethernet
- Created API for test equipment

Programmer: **2006–2007**
Microsoft Corporation, Redmond, WA,

- Developed firmware for high-speed USB mouse
- Evaluated chipsets for Ultra-Wideband networking

Senior Scientist: **2003–2006**
SAIC @ US Naval Research Laboratory, Washington, DC

- Developed LabView and MATLAB applications for instrumentation control and data acquisition
- Developed FPGA algorithms for acquisition and formatting of real-time data
- Performed analysis of experimental data relating to high temperature superconductivity

Systems Engineer: **1990—2000**
Raytheon Electronic Systems, Falls Church, VA,

- Developed direction finding and interference cancellation algorithms for array-based receivers
- Developed DSP algorithms for RF modulation/demodulation, signal processing, and audio signal processing
- Developed imbedded C and assembly code for real-time systems
- Designed digitally controlled frequency reference circuit card for large receiver system
- Designed digital tape based wide band digital receiver system for IR&D effort using COTS hardware

EDUCATION:

- George Mason University: B.S. Electronic and Computer Engineering
- George Washington University: Classes in Data Signal Processing/Stochastics