Michael Mann

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Summary

Highly skilled software engineer with extensive experience in embedded systems development, network communication, and industrial protocol implementation. Proven ability to architect, develop, and maintain complex software solutions, including EtherNet/IP protocol stacks and automated vehicle GUI interfaces. Expertise in C/C++, C#, and a range of embedded platforms (Windows, Linux, VxWorks) with a strong track record of mentoring teams, driving protocol standards, and contributing to open-source projects like Wireshark (1900+ commits).

Skills & Abilities

LANGUAGES

- Primary: C/C++, C# (including WPF)
- Secondary: Python, Perl, Lua, WiX

PLATFORMS

- Operating Systems Windows and Linux application development
- Embedded development in Windows, Linux, VxWorks and on Intel and PowerPC CPUs, numerous IDEs

TOOLS

- Version control: Git (TortoiseGit), SVN, ClearCase
- Issue tracking: JIRA, GitHub, Gerrit, GitLab, Bugzilla, ClearQuest
- IDEs and build tools: Visual Studio (versions 6 through 2022), Visual Studio Code, Eclipse (basic and custom), Doxygen, GNU Make, NMake, CMake

PROTOCOLS

- Primary: EtherNet/IP, CIP, Modbus, J1939 (CAN), various OSI layer 7 proprietary protocols
- Secondary: TCP/IP, DTLS/SSL, CAN, Serial, FTP, TFTP, CIPSafety, DHCP, SMTP, SNTP

MISC.

- Experience with Agile and Waterfall methodologies
- Passionate interest in how computers are used to parse information
- Self-motivator that works well independently as well within a team
- Concise and respectful communication skills

Work Experience

VEHICLE SOFTWARE LEAD (R&D) | JBT CORPORATION | FEB 2018 - JAN 2025

- Responsible for software running on the Automated Guided Vehicles (AGVs)
- Develop desktop application in C# using MVVM to assist in vehicle file and diagnostic management
- Refactor vehicle software for object-oriented improvements, libraries for modularity, and reduction of technical debt
- Working with all engineering disciplines to develop software functionality on the vehicle
- Mentor junior staff and teammates in software development
- Implement best practices to debug and provide diagnostics of vehicle software

- Integrate custom protocol interfaces for batteries and various sensors on the vehicle
- Assisted with the adoption of git and GitHub outside of vehicle software

Senior System Engineer | Pyramid Solutions | July 2001 - Feb 2018
- Architected the industry-leading EtherNet/IP protocol stack. Provided everything from support, to documentation and onsite training
- Assisted clients in conformance and compliance of EtherNet/IP
- Lead designer and developer for many embedded development projects with focus on network communication
- Designed, developed and tested HMI software for engine control systems
- Developed firmware solutions for resource and CPU limited devices
- Developed demos of PLCs and controls for industry shows
- Programmed PLCs as part of various test suites for different embedded devices
- Took the success of single one-man project of adding a protocol to an embedded device and turned it into multiple successful projects involving multiple developers
- Collaborated with other industry experts on driving industrial protocol standards
- Published protocol specification enhancements and contributed on whitepapers
- Trained and mentored junior programmers in programming methodologies and best practices

Passion Projects

Core developer | Wireshark | july 2012-present
- Create protocol dissectors from scratch using provided specification
- Review and approve code submitted by other developers
- Worked with many abandoned patches to get them integrated into the main source because they were good ideas that just needed a little more work
- Drastically improve the code quality of dissector code with retroactive code reviews.
- Refactor parts of the dissection engine, better separating business logic from UI layer to make transition from GTK to Qt GUI easier
- Wrote Perl scripts to enforce quality coding standards
- Over 1900 commits

Developer | Carcassonne on Tabletop Simulator | December 2021-present
- Use Atom IDE to improve the Lua script code for Carcassonne board game
- Modularized the code to have separate files for each expansion rule set for better readability
- Added automation feature sets to improve game play
- Added game statistics to provide analytics to different game strategies

Student | uDemy 100 Days of Code: The Complete Python Bootcamp | January 2025- March 2025
- Took the course to learn Python, but also to explore AI (not covered by the course)
- Completed the exercises myself but also prompted Google's Gemini to see how it would do with all the exercises (good, but certainly not perfect)

Education

Bachelor of science | Case Western Reserve University
- Major: Computer Science