

Richard F. Man

Embedded Systems and Compiler Guru, Development and Program Manager

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Publications

College level tutorial reference book: "C for Everyone: JumpStart Guide to the C Programming Language" (2016), and a selection of articles on C and multitasking kernels for Circuit Cellar and embedded-computing.com.

Key Skills

- Managing product specifications, designs, releases, and development teams. Knowledgeable with the lifecycle process from defining project requirements, project mission and vision, project planning, and documents, and managing engineering teams.
- Project development using the Agile process and Scrum framework.
- Negotiation of agreements for products, resale, manufacturing, and distribution.
- C Guru: in-depth experience implementing production C/C++ compilers, optimizers, debuggers.
- Embedded system design and development including RTOS and driver development for BLE, Wifi, TCP/IP, USB, I2C, SPI, CAN etc.
- In-depth understanding of algorithms, programming language design such as Java, C++, Python, compilers, code generators and optimizers, interpreters and VM, JIT, runtime support, debuggers, Unix, Linux, OS internals, message-passing microkernels.
- As a Tai Chi instructor, I utilize a "Zen approach" to management, negotiation, and conflict resolution. I am people and customer focused, and work well both leading and being a part of a team.

Current Experience

1998 - Current: ImageCraft Creations Inc., Palo Alto, CA - Co-founder and Technical Director

ImageCraft offers an array of embedded systems software and hardware tools including compilers for AVR, ARM Cortex-M, the Wifi2go wifi-enabled module, and the Smart.IO UI app wireless module. Roles include management of human resources and projects, code development for all products, product releases, and sales. ImageCraft's annual revenue is between half a million to a million dollars.

Management: Defined and set product goals and managed product releases. Negotiated multi-million dollar contracts with silicon vendors (including Atmel, Freescale, Cypress, and Parallax) for compiler work and resale.

Negotiated manufacturing in Korea and China, and international distributor agreements including in Germany, Russia, UK, Japan, Korea, and China. Worked with partners on pricing, quality, localization issues.

Led development of multiple generations of Windows-based compilers/debuggers/IDEs for the ARM7 and Cortex-M, Atmel AVR, Motorola/Freescale HC11, CPU12, HC08, TI MSP430, Parallax Propeller, Cypress PSoC1 series. Directed a team of 3 contractors as well as a compiler firm in India.

Software: Wrote code generators for the above processors, created the industry's first whole program compression optimizer, C libraries, and IDEs.

Designed, implemented, and debugged IoT toolkit with REXIS RTOS with message-passing microkernels for Cortex, the JumpStart API for the Cortex MCU, and the Smart.IO API and firmware. Wrote and debugged firmware examples for Cortex MCU, I2C, SPI, UART, RTOS, Wifi, TCP/IP, USB. Debugged and integrated lwIP TCP/IP stack with REXIS RTOS.

Hardware: Led development and manufacturing of educational kits, the Wifi2go Internet-of-Things module, and Smart.IO, a toolkit for creating programmable user interfaces for embedded systems on smartphones without app coding.

Others: Responsible for hiring and managing employees, contractors and consultants in the USA, Australia, Germany, India, and Bulgaria. Also responsible for product branding, client support, marketing, and overseeing website development.

Previous Experience

HP, Cupertino, CA - Technical Project Manager

UCode code generator project manager at HP's California Language Lab. Managed a team of 10 members responsible for the PA-RISC and Itanium compilers. Ensured that the team released the critical first compiler on schedule.

HP, Cupertino, CA - Senior Software Engineer

Member of the UCode code generator project. Wrote the first code generator for the HP/Intel Itanium backend using BURS (Bottom Up Rewrite System), and worked on the PA-RISC code generator. Interacted with the optimizer and front end teams on project requirements and product releases.

DEC, Nashua, NH - Senior Software Engineer

Member of the GEM Optimizing Compiler team. Wrote the Intel x86 backend and contributed to the Windows NT runtime support. Worked on the MIPS and VAX-11 backend.

Whitesmiths / Intermetrics, Westford, MA - Software Engineer

Member of the compiler team. Proposed and was charged with designing and implementing a machine-independent optimizer using Structured Data Flow. Exceeded the goal of improving compiler effectiveness by more than 20%.

Education

M.S. Computer Science, Tufts University, Medford, MA. Thesis: "Subsumption Architecture-Based Multitasking Kernel for Robotics".

B.S. Electrical Engineering with a double major in Computer Science, Tufts University, Medford, MA.