Michael W. Dierks

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Engineering Professional
Software Systems | Control Development

PROJECT LEADERSHIP • FULL LIFE-CYCLE RESPONSIBILITY • CLASSIC & MODERN CONTROL DEVELOPMENT
TOTAL PLATFORM ARCHITECTURE • OBJECT-ORIENTED & UML DESIGNS • SYSTEM INTEGRATION

Skilled professional with over 20 years of experience designing business-critical products and support systems. Effective team member developing trust and communications between organizational areas. Proactive team lead instrumental in directing product development and personnel. Practiced in customer consultations and field testing in adverse environments with a comprehensive knowledge of software processes and development means.

PROFESSIONAL EXPERIENCE

♦ **Direct Methods LLC,** Arvada, CO 80004   **10/2007 – present**
Consulting Technologist | Managing Member

- Manage business operations in a multi-client technology services company.
- Design and implement feature enhancements for existing products. Reverse engineering and analysis of existing competitive products using stimulus/response testing for development of drop-in replacement performance.
- Develop proof-of-concept using off-the-shelf development systems and custom-designed support circuitry.
- Actively involved in planning and design review process of clients. Analyzing full life-cycle from component selections to circuit design, verification/testing and production.
- Currently involved in electrical design and software system development in medical and consumer space.

♦ **Cognitive Solutions, Inc.,** Golden, CO 80403   **7/1999 – 12/2007**
Technical Lead – Firmware | Senior Firmware Engineer

- Responsible for platform architecture of next-generation high performance printer, including processor selection, memory system and peripheral design. This solution was based on an ARM-9 derivative processor with expanded interface connectivity to afford a rapid time to market. Specific design challenges solved included modeling and testing of high-speed stepper motor control with precise power/heat flow modeling and logic algorithms for print head control.
- Developed schedules for and content of product development plans as technical firmware lead. Coordinated multiple platform releases between marketing, manufacturing and advanced customer operations
- Firmware architect for clean-sheet portable printer design. Optimized system control for low-power battery printing requirements. Designed efficient print head control algorithms to improve printing density and speed.
- Responsible for implementing marketing strategies for niche solutions. Managed and maintained legacy products codebase to enable critical market opportunities. Responsible for multiple products with dissimilar implementations comprising the mainstay of the corporate revenue base. Executed product hardware upgrade/redesigns for EOL components that required replicating exact functional performance for existing customer base.

♦ **DICKEY-john Corporation,** Auburn, IL 62615   **8/1993 – 6/1999**
Senior Software Design Engineer | Software Design Engineer

- Lead software development for modular seeding monitor product with $3.9MM in yearly sales. Responsible for full life-cycle software process including: risk assessments, specification, scheduling. Worked with manufacturing/production personnel in an ISO-9001/QS-9000 conforming operation to guarantee product testability and maximize factory productivity.

- Achieved 26% cost reduction in seeding applicator product by developing an adaptive model-following control algorithm which eliminated the need for custom components. Substituted cost-effect standardized parts with higher tolerances.
- Sustained $2.5MM NIR analytical instrument product line with extreme short-cycle redesign of code and processor hardware to maintain product viability.

♦ **Southern Illinois University at Edwardsville,** Edwardsville, IL 62026   **8/1989 – 6/1992**
Control Systems Research | Graduate Assistant

- Independently researched a thrust-vectoring damage compensation system using modern control algorithms and implementation methods. Peer-reviewed results published/presented at AIAA GNC conference. Collaborated on additional research papers addressing automated controller design using Robust Servo LQR and H_∞ sensitivity minimization.
- Developed materials and course work for graduate-level microcontroller applications laboratory. Lectured undergraduate courses in application of embedded microcontrollers for control systems and fundmentals of control theory.

♦ **Olin Corporation – Brass Division,** E. Alton, IL 62024-1197   **5/1984 – 5/1989**
Development Engineer | Engineer Trainee

- Implemented new control system reducing rework costs by $200,000 per year, yielded productivity gains of 6%, and corrected significant safety problems with D.C. primary casting unit. Instrumental in the development of hardened inductive proximity sensor instrumentation.
- Increased throughput on Fineweld® tube-mill line 22% annually with updated control algorithms.
- Specified all components (motors, DC-drives, controllers) on $400,000 equipment upgrade. Designed and implemented system control programs.

Processor and Computer Systems Expertise: *Processors* | Motorola 68331,68332, DSP 56001/2, 68HC11; Intel 8096, 8051 FA/GB, 80188/6; Toshiba TMP95C061, TMP91CW12, ATMEL AT91RM9200, ARM 7/9 core, AVR and AVR32 series; *Languages* | C, C++, Various assemblers, Java, Tortoise/Subversion (CVS), Microsoft Visual Development Environment (VSS, VC6), MFC; *Operating Systems* | RTXC, CMX, µC-OS, Window 95/98/XP, Windows CE, Palm OS; *Protocols* | Proprietary RS232/485, CAN 2.0B, OSI Reference, TCP/IP Stack and Applications, Embedded Linux Kernel, USB 2.0 + Device classes for Printer, Serial, MSD, Ethernet, Bluetooth.

PROFESSIONAL REGISTRATION & AFFILIATIONS

Registered Professional Engineer in the State of Colorado and State of Illinois

Member: Institute of Electrical and Electronics Engineers (IEEE) | Controls System & Computer Society, American Institute of Aeronautics and Astronautics (AIAA)

EDUCATION

SOUTHERN ILLINOIS UNIVERSITY at EDWARDSVILLE – 6/92
MS Engineering, Electrical | Microprocessor Design and Modern Control Preference

UNIVERSITY OF MISSOURI at ROLLA – 5/84
BS Electrical Engineering