
OVERVIEW OF QUALIFICATIONS

Visionary Technical and Strategic Development Leader with 25-year portfolio of success assessing technology and business requirements and devising and executing customized strategic plans to achieve organizational goals. Reputable for pioneering innovations including a dozen patented designs in diagnostics, fault tolerance, Internet connectivity, and diesel combustion. Skilled in leading cross-functional teams through full project life cycles. Dynamic communicator, adept at distilling and conveying complex information to broad-based audiences. Solid academic background, coupled with detailed design expertise, architecture capabilities, technological vision, and project management skills. Demonstrated ability to quickly absorb and leverage knowledge of complex systems to develop innovative products.

Additional areas of expertise:

- Strategic Planning
- Systems Design
- Proposal Writing
- Business Development
- Prototype Development
- Executive Reporting
- Project Management
- Client Relations
- Team Leadership

OUTSTANDING PROFESSIONAL ACCOMPLISHMENTS

- Spearheaded the architecture-driven design process to create the production version of the Eaton Diesel-Electric Hybrid control system; efforts resulted in 50% to 75% fuel economy and emissions improvements over previous system; design has subsequently been deployed for use by FedEx, Coke and UPS.
 - Used same model-based process to create a system for controlling an automated heavy-duty manual transmission for Eaton Corporation; led team through the training, architecture development, design and transition to the internal team.
 - Implemented and tested a hybrid vehicle prototype for the next generation of HMMWV for Lockheed Martin Corporation; led the debugging and integration of the hybrid components, powertrain digital controllers and electric systems.
 - Directed the development of the combustion management control for the first heavy-duty diesel engine to meet the 2004 EPA low emission requirements; utilized new technologies including multivariable control and virtual sensors to manage a combustion system that contained new components: variable geometry turbo and exhaust gas recirculation with exhaust gas cooling.
 - Led the development of an enterprise-wide approach to architecture for the creation, manufacture and support of Cummins' on-engine controllers and PC-based software; defined corporate strategy known as "SmartPower," the integration of electronics and IT into every aspect of the company's products and processes; presented concepts to 2000+ member audience in April 1997 at the 2nd annual JavaOne Convention.
 - Designed the jet engine simulator used by General Electric, Northrop and General Dynamics for the flight clearance testing of the Advanced Tactical Fighter prototypes; system provided a graphical user interface and custom analog hardware to allow the simulator to interact with production engine controls in real time.
 - Partnered with Draper Laboratories to develop a fault tolerant processor concept for use in advanced jet engine control designs.
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George Brunemann EMPLOYMENT HISTORY

NGEK, INC., Cincinnati, OH

2002-Present

President / Embedded System Architect

- Direct all daily business operations of New Generation Engineering Knowledge, specializing in embedded control system design and development of innovative, intelligent products.
- Recruit, hire and train personnel; create and administer budgets; prepare year-end reports.
- Develop project scopes, estimate costs, coordinate project schedules and allocate resources.
- Lead cross-functional teams of up to 40+ members through full project lifecycles.
- Interview clients' management team to gather requirements, partner with technical leaders to devise solutions; select appropriate vendors; report project progress at frequent intervals.
- Serve as Embedded System Architect, create base architecture and core algorithms to manage control systems interactions and ensure optimal performance.
- Facilitate technical discussions throughout development; conduct technical reviews, management reviews, training sessions and client presentations.
- Conduct field tests to analyze real-time data and make calibration and algorithm adjustments.

CUMMINS ENGINE COMPANY, Columbus, IN

1993-2001

Senior Technical Advisor, Control Systems / Technical Lead, Total Systems Architecture

- Developed strategy and implemented corporate-wide integration of new technology into electronic product platforms.
- Transitioned controls organization from five separate designs to single set of algorithms and source code.
- Partnered with Senior Executive Management team to cultivate understanding of technical concepts, build consensus and set strategic direction.

GENERAL ELECTRIC AIRCRAFT ENGINES, Cincinnati, OH

1985-1993

Senior Engineer/Control Systems Design and Simulation

- Played integral role on task force for Lockheed Advanced Development Company on the Emergency Start System for the U2 aircraft.
- Demonstrated sensor fault identification and substitution strategy using an embedded model of the jet engine inside the control system to provide estimates for sensed parameters.
- Led the system integration and testing of a real-time video processing system.
- Created the preliminary design of the fault recovery strategy for the GE-F120 engine control.

TECHNICAL PROFICIENCIES

- **Software:** MS Project, Matlab/Simulink, CANape, Enterprise SourceForge, CVS, ClearCase, MS Office, OpenOffice, MS Access, Visio
- **Platforms / Operating Systems:** all versions of Windows, Linux, Solaris, Unix, CPM
- **Hardware:** Desktop, custom high-speed desktop, laptop, Sun
- **Programming Languages:** Matlab RTW/EC, C, C++, Ada, Java, Jovial, Fortran, PL/M - Assembly languages for 8080, Z80, 68000, 1750A

ACADEMIC BACKGROUND

UNIVERSITY OF CINCINNATI, Cincinnati, OH

- **Master of Science in Computer Engineering** (GPA 4.0/4.0)

UNIVERSITY OF EVANSVILLE, Evansville, IN

- **Bachelor of Science in Computer & Electrical Engineering** (GPA 4.0/4.0)
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