



KCI
PO Box 1641
Litchfield Park, AZ 85340
(605) 427-2649
Toll Free (800) 694 0236
Fax (605) 427-2647

This KCI consultant is an accomplished design engineer and technology leader with a rich history of achievement in product development, embedded software and electronics design, systems research and development, and team/project management

Brings a strong combination of technical acumen and management ability to the engineering and business environment along with first-class expertise in system and software modeling, simulation and performance optimization

Professionalism and wealth of experience in a wide array of industries, technologies and markets makes him exceptionally well suited for a dynamic, product or engineering organization – his resourcefulness means he is especially adept at embracing and applying new technologies and is project-oriented always interested in doing and learning new things

History of Achievement & Technology Contributions

- *Created performance models of Linux and proprietary OS layers, Lustre/VFS file system services, RAID I/O and striping configurations, and system I/O service nodes to establish a predictive system simulation framework for analyzing and optimizing system performance in support of client's High Productivity Computing System proposal activities to DARPA*
- *Designed and built high-speed router, network flit and packet-level behavioral models and stochastic workload abstractions to analyze high performance computing interconnection network performance under varying traffic patterns and workloads*
- *Designed and executed Meta Data Server scaling and performance simulation experiments to predictively demonstrate acceptable parallel processing system performance under extreme file creation and read/write workloads – these predictive analysis results helped the client win \$250M funding from DARPA for ongoing technology and system R&D*
- *Conceived and prototyped a simulation based “virtual laboratory” and performance experimentation software product suite for predicting and optimizing complex data processing system performance-cost tradeoffs and reducing deployment risks*
- *Designed and developed a batch job scheduling optimization toolset prototype for a high performance computing center using a combination of C-language programming, system simulation modeling tools, and spreadsheet data analysis*
- *Named as inventor on broad patent for an object-oriented distributed processing and control system*
- *Distributed embedded building controls – Led OS and system scalability, performance analysis, and design validation team activities for a networked 10,000-node distributed control architecture for the company's flagship HVAC product suite*
- *Distributed embedded building controls – Researched, analyzed and developed a behavioral analysis simulation model of a 7-layer OSI stack based CSMA network protocol – used to optimize network configuration and application bus loading*
- *Automation system controls – Led a system architecture, OS, application software and network simulation project to validate system architecture and correct early design flaws, optimizing performance for the company's flagship product*
- *Automation system controls – Created Ethernet and CAN network protocol simulation models for manufacturing automation systems to optimize network, system and application performance, transaction latency and resource utilization, and to validate system and software architecture*
- *Designed and developed a rapid software application prototyping toolset for LonWorks based products for the building controls software engineering organization to enhance designer creativity and reduce product development time*
- *Led real-time (kernel) software R&D to optimize thread scheduling performance in symmetric multiprocessing (SMP) platforms – Microsoft and Intel tailored their OS (NT) and hardware products respectively to the technology's capabilities*



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History of Achievement & Technology Contributions

- *Performed research and analysis of behavioral characteristics of Intel Pentium Pro microprocessor instruction pipeline mechanisms – the resultant analytical models formed the basis for subsequent product R&D activities*
- *Designed a neural network and fuzzy-logic based product architecture and kernel-level algorithms for improving application throughput performance using intelligent thread scheduling mechanisms and dynamic prediction techniques*
- *Discovered a new real-time thread scheduling approach to reducing the performance losses resulting from branch mispredictions in deep pipelined processors*
- *Developed an SMP system bus transaction throughput compression model and OS kernel thread scheduling algorithm to improve system performance using a real-time latency and throughput prediction mechanism*
- *Designed, developed and prototyped embedded system hardware and software for a set of tiny web server equipped environmental monitoring and control applications for a commercial energy management services firm*
- *Created embedded system hardware/software architecture models, component-level behavioral models and stochastic workload models for an advanced embedded image processing system platform to validate architectural designs and inter-component interfaces, explore performance tradeoffs, and optimize software-hardware mapping assignments*
- *Designed an FDA-approved embedded QA inspection system for a leading heart valve manufacturer – designed all digital/analog electronics and software elements including closed-loop stepping motor subsystem controls, acoustic and force monitoring subsystems, serial data interface, and C++ based operator GUI; instruments sold at 70% gross margin*
- *Devised and fabricated a set of embedded processor controlled semi-automated heart-valve assembly systems – designed A/D and D/A interfaces, data acquisition software, serial data communication interfaces, state-machine based control logic and operator interface software; wrote associated technical and operational user manuals*
- *Spearheaded a three-company alliance to integrate constituent technology, engineering and development resources needed for cooperative product R&D for a proposed \$10M/yr new business program*
- *Led consulting engineering services for data storage network modeling, simulation and performance, specializing in large and complex system installations (100TB+)*
- *Led technical development of digital and analog electronics, embedded software, mechanics, and optical systems – over 20 FDA-approved commercial blood chemistry instrumentation products released in 5 years*
- *Designed high-impedance differential amplifiers, D/A, A/D, and power circuits for blood-chemistry instruments; designed a switched bank memory to expand the addressable memory range of the Intel micro-controller architecture in place*
- *Designed a series of embedded system OS, data acquisition, user interface, blood chemistry algorithm, network data communication management, and system test software modules and applications for microcontroller based instruments*
- *Led two-year engineering effort to automate manufacturing processes, resulting in production throughput increase from 13K units/month to 150K+ units/month – designed state-machine based automation controls and software running in PLC hosts*
- *Invented a disposable whole-blood based hematocrit-hemoglobin sensor and the associated instrumentation electronics, measurement algorithms and embedded software for an in-vitro blood chemistry test product*
- *Researched video to photographic response mapping functions for embedded system control of photo-printing systems and applications*
- *Developed nonlinear analytical models of video-response to photographic-exposure transfer functions and translated them into exposure sensing & control algorithms for embedded software management of video-equipped photo-printing systems*
- *Designed and implemented prototype embedded software in C and Assembly for developmental photo-printing system products including exposure control modules and video image data capture and signal processing functions*



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Education

BACHELOR OF SCIENCE – ELECTRICAL & COMPUTER ENGINEERING

University of Wisconsin – Madison, Wisconsin with honors
Specialization: Computer Design, Digital Circuits and Control Theory

ASSOCIATE – ELECTRONIC DESIGN

Waukesha County Technical Institute, Pewaukee Wisconsin with honors
Specialization: Electrical Circuit Design, Digital & Analog Electronics and Instrumentation

Professional Leadership Traits

Consultive, diplomatic team player married to consensus-building posture; encourages peers to excel
Champion of strong process-oriented system requirements analysis, development and engineering functions
Quick study, inventive problem solver – eager to own a series of assignments and drive them to resolution
Creative thinker and risk-taker who can also drive tactical details without losing sight of the big picture
Excellent liaison between technical and non-technical roles and disciplines; strong customer interest
Accomplished project management abilities in cross functional and matrixed reporting environments
Exceptional presentation and writing skills with extensive public speaking experience
Eager to learn new tools, techniques, technologies, processes and apply to new application arenas
Enjoys working with customers and account management to enhance business development opportunities
Strong system architecture background with broad product and application development experience
Seasoned design engineer – ten's of thousands of lines of code; electronic circuits; algorithms; process
Substantial understanding and expertise with intellectual property protection issues and activities

For more information contact [KCI sales](#) or visit our [website](#).
