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Kyle Wilson

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I have more than ten years of experience as a software engineering lead and senior level individual contributor, with a focus on software architecture and large, complex projects. I have developed and refactored systems that involve extensive concurrency, distributed processing and networking.

Technical Lead | Principal Individual Contributor | Broad Based | Software Architecture
FDA Regulated Environments | Deep Experience | Cross Disciplinary Teams
New Product Development | Refactoring | All Aspects of Product Lifecycle | Complex Projects

Extensive Experience: .NET, 3D transformations, ATL, AWS, Assembler Languages (Including Intel x86), C, C#, C++ (including C++ 2011), COM, Concurrent, Data Compression, Dicom-3, Distributed, DynamoDB, Embedded Systems, Engineering Development in an FDA Regulated Environment, GIT, HTML, High Speed Data Acquisition, Image Processing, JPEG, JSON, Java, Linux, MRI, Motors Control, Multithreading, Object Oriented Design, Perl, QNX, S3, SCSI, SNMP, Sockets, Software Architecture, TCP/IP, TIFF, Windows API, Windows Driver Development, Windows Embedded, Windows Operating Systems, Windows Service Programming, XML

Some Experience: Active-X/OLE, Agile, PInvoke, Cryptography (Symmetric and Public Key), Digital Electronic Design, IEE802 Ethernet protocols, JavaScript, Lisp, MAPI, MFC, Mantis, MySQL, Node, Postscript, Relational Databases, SQL, Sonet/SDH, UML, Web Development, Unity, MongoDB, Angular, Agile Development

Education: Bachelor of Science Cum Laude from Northeastern University in Electrical Engineering.

KMC Systems: 2016 to present

KMC is a contract engineering firm that designs develops and manufactures medical robotic systems for other companies on a contract basis.

Individual Contributor on Time of Flight Mass Spectrometer: Staff Software Engineer

- Develop embedded Java code for a clinical diagnostic mass spectrometer.
- Provide support and mentoring to less senior members of the development team and those with limited java development experience to improve overall code quality
- Support SQA effort and develop automated requirements tests to streamline verification efforts.

Software Technical Lead for Class III Robotic Clinical Instrument: Staff Software Engineer

- Took on software technical lead role for a team developing a class III robotic clinical instrument. System implemented in C# on embedded windows 10 persisting data to a local SQL server database. External interfaces are RESTful with an angular 2 based diagnostic interface and node based manufacturing support diagnostics. Multiple three+ axis arms transporting and manipulating items within the system.
- Managed software task assignment, defect prioritization, schedules and process flow. Interface to other disciplines and prototype manufacturing process. Interface with customer and software requirements development.
- Individual contributor developed and deployed code to support selected hardware components.
- Implemented manufacturing support diagnostics in the node environment and worked to minimize impact of manufacturing support on the rest of the software team.
- Designed, implemented and released manufacturing FRU test software tools in C# using WPF.
- Completed successful handoff of system software to the customer on time and feature complete to the customer's specification after completion of formal SQA validation.

Results Management Service for Class III Robotic Clinical Instrument: Principal Software Engineer

- Designed and implemented results management and auditing service in C++ on QNX.

- Designed software architecture elements for failure management in this system. Gained consensus within the development team, documented the design and drove initial implementation.
- Designed software architecture for extended auditing and gained team consensus on the design.

Kiva Systems/Amazon Robotics: 2014 to 2016 Senior Software Engineer

Configuration Management Portal for Next Generation Warehouse Robotics Platform

- Technical lead developing configuration management portal for SOA/AWS based next generation warehouse robotics platform. Java based system running on AWS hosts using S3 and DynamoDB for storage. JSON data transport and RESTful interfaces between components.
- Gathered requirements from the organization, generated architecture and design approach and validated with internal customers. Carried out detailed design and implementation of the components. Initial version is deployed to production and work is progressing on additional features and internal customer feedback.

GE Healthcare, Healthcare Systems: 2009 to 2014 (GE Acquired ONI) Software Architect

Specialty MRI Products Software Development

- Responsible for the continuing development of the specialty MRI products that were acquired from ONI Medical Systems. Technical lead, software architect and individual contributor.
- Drove the specification for next generation PCIe to MRI scanner hardware interface design developed by a team in Bangalore, India. Developed Windows driver code and software/hardware interface design. Carried out hardware/software integration. Worked with the FPGA developer in Bangalore to locate and address issues with the FPGA/Driver integration and develop tool code to diagnose internal FPGA issues. Adapted the main user mode scanner service code to integrate this new hardware into the existing MRI scanner software as a demand loaded plug-in.
- As technical lead for the software team, I was involved in most activities that the software team pursued and acted as support for particularly difficult software issues. I managed the software release cycle and training and mentoring the other engineers on the team.
- Redesigned the core MRI scanner service code for substantially greater concurrency and more flexible run-time loading of core components.

ONI Medical Systems Inc: 2005 to 2009 Principal Software Engineer

MRI Scanner Software Development

- Overall responsibility for the technical integrity and direction of the development of software for ONI's high field, superconducting MRI scanner products.
- Technical lead for all ONI of software engineering.
- Extensive software development in C++ on XP embedded involving both refactoring of existing code and significant evolutionary extensions both as an individual contributor and as the lead providing direction to the rest of the development team.
- The software platform for ONI's MRI scanner involves a wide range of components from high speed data acquisition code with tight recursion intervals and mathematically intensive image reconstruction algorithms to Dicom medical image networking and a full windows user interface.

Groove Networks Inc: 2003 to 2005 Principal Software Engineer

Enterprise Integration Server (EIS) Product

- Technical lead for EIS at Groove. Guided the process of converting the server from JavaScript to C# based extensibility.
- The EIS product allowed large enterprises to automate connections between Groove's enterprise peer to peer client products and existing in-house information infrastructure.
- More than six million lines of highly customized COM/ATL C++ code and supporting JavaScript.
- A heavily threaded server communicating over encrypted socket connections targeted at high availability enterprise environments.

Tektronix Inc and Digital Lightwave Inc: Software Architecture Lead.

Software Architecture Lead for the OTS9000 Test System Product Line

- Architecture lead and individual contributor developing the software platform on which the OTS9000 Sonet/SDH optical networking test product line was based.
- Heavily threaded COM based infrastructure with an NT service hosting in-process components and custom kernel mode drivers to manage the instrument modules, a DCOM remoteable user-interface frame hosting ActiveX controls to provide interactive control and a separate modular SCPI interface providing automated control capability. Total system contains more than 800, 000 lines of C++ code.
- Evolved Windows NT/2000 based software architecture for a compact PCI based modular test instrument from supporting one set of modules developed by one team in a single location to support five development teams in three widely separated locations while successfully releasing seven major versions of the system. Modules developed by the various groups can be mixed in a single system to meet customer needs.
- Extended software architecture, infrastructure and supporting components to support emerging requirements, streamline development and reduce the potential for errors. Documented existing design and streamlined implementation. Redesigned system components as needed to enhance modularity, improve robustness and address new requirements. Implemented new COM components and C++ code and refactored existing components, frameworks and driver code. Created base class hierarchies and template classes to reduce duplication of code and improve system robustness.
- Drove programming and process 'best-practices', instituted and implemented modular automated build process and nightly builds. Restructured the code-base so that code related to individual modules is kept together to make development by multiple teams easier.
- Provided training and mentoring to the rest of the development teams on both platform issues and broader software technologies and techniques.
- Managed two direct reports who worked on the software platform. Gathered initial requirements, developed project charter and implementation plan and coordinated work on the software platform with ongoing development by the module development teams.

Xerox Inc.: Software Technical Lead.

Redesign of the Document Centre Core Software to Target Windows NT Embedded.

- Technical lead in the redesign of 250,000 lines software system from an embedded C/Unix (LynxOS) environment into a C++/Windows NT Embedded environment.
- Leading contributor to the architectural redesign. Provided technical leadership and platform/language training to the team. Ensured the overall technical integrity of the new code-base and related processes.

Designed and Developed Prototype Modular SNMP Implementation.

- Developed a new modular SNMP implementation using Microsoft SNMP extension agent technology.

Puma Technology Inc: Senior Software Engineer.

Outlook Translator Development for Intellisync.

- Extended and enhanced COM based PDA to desktop data synchronization manager for Outlook 98 (MAPI).

Howtek Inc.: Senior Software Engineer.

Windows NT Based Dicom-3 Medical Image Server:

- Generated requirements for software aspects of Howtek radiological film digitizers.
- Designed and implemented multithreaded Dicom-3 database service on Windows NT 4.0 in C++ for storage and retrieval of secondary capture images.

JPEG Codec Support and Dicom-3 Image Transmission Management Library:

- Designed and implemented modules to manage lossy and lossless JPEG transmission of medical images using the Dicom-3 protocol.

Howtek Scanner Toolkit for Windows NT and 95:

- Designed and implemented the Howtek third party scanner interface library providing software developers with thread safe access to all Howtek scanners.
- This library went through three major revisions and was incorporated into a number of commercial products.

Main Control Processor Firmware for SM2500/Pro-G/DX Flatbed Scanners:

- Designed and developed the core firmware for the DX/Pro-G/SM2500 series of flatbed scanners.

Main Control Processor Firmware for the SM7500 Drum Scanner:

- Designed and documented the firmware architecture of Howtek's next generation of drum scanners
- Designed and developed the core firmware for the multiprocessor 80186 based SM7500 scanner using the AMX real-time kernel. Implemented core firmware support code and libraries. Lead the team developing the rest of the firmware system.
- Implemented common interprocess(or) communication protocol and library used throughout the system. Communications protocol supported full local/remote messaging.
- Designed and implemented flash memory storage facility with data compression.
- Provided support and coordination within the firmware team and between the firmware team and the other engineering teams.
- This code base and architecture has been successfully employed to support four subsequent Howtek scanner products using a range of hardware architectures.

Main Control Processor Firmware for the D4000 Drum Scanner:

- Redesigned data acquisition, processing and transport code and flash memory programming code to dramatically improve reliability and performance.

GenRad Inc.: Digital Design Engineer

228x High Speed Test Set Sequencer Board

- Designed and implemented a high speed custom microprogrammable controller for the 228x board test system.

Test System Interface Board

- Designed a VXI/VME interface to a GenRad proprietary instrument control bus.