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Education and Training

M.S. in Software Engineering   Graduation Pending Capstone Project
George Mason University, Fairfax, Virginia

M.S. in E-commerce (3.75 GPA)   Fall 2003
George Mason University, Fairfax, Virginia

B.P.S. in Computer Technology (3.75 GPA)   Spring 2002
University of Mary Washington, Fredericksburg, Virginia

A.A.S. in Information System Technology (Cum Laude)   Spring 2000
Germanna Community College, Fredericksburg, Virginia

CMMI v1.3 Model Upgrade   March 2011
Software Engineering Institute, Arlington, Virginia

Introduction to CMMI   August 2007
Software Engineering Institute, Arlington, Virginia

Professional Experience

Managing Director / Software Architect/Engineer   9/2008 to present
Self-employed / Quaso LLC, Stafford, Virginia

- Requirements Analysis: rapid elicitation of system requirements using non-functional prototypes; creation of Software Requirement Specification (SRS) conforming to IEEE standards
- Systems Design: creation of System Design Document (SDD) and Interface Control Document (ICD) using Enterprise Architect (EA) following IEEE and DoJ templates, UML 2.0 diagrams, and various Visio network diagrams
- Software Development:
    - Developed an app using Ionic, Cordova, and Angular.js with a responsive UI that accommodates desktops, tablets, and phones for Android, iOS, and web browsers that interacts with a RESTful backend
    - Developed an iOS app using Swift and XCode with integrated voice recognition
    - Developed a rich, single-page web application using Marionette.js, Require.js, and JQuery
    - Developed a rich, single-page web application using Backbone.js, Require.js, JQuery, Spring Web, Java, Solr, and RabbitMQ
    - Developed an advanced decision support system using an evolutionary algorithm (genetic), software agents (JADE), a custom ontology (OWL/Protégé and JENA), JBoss Seam, and JBoss ESB
    - Development of a patent-pending algorithm for sentiment analysis using C# .NET and SQL Server
    - Customization and integration with various COTS products

- Development of a VXML/CCXML phone system and ASP.NET web request handlers
- Developed web user interfaces including custom Javascript and DOJO/DIJIT widgets
- Designed and developed a 3-tiered ASP.NET MVC web application using Spring.NET, LINQ, and JQuery
- Designed and developed a 3-tiered ASP.NET 3.5 web application and XML-based web services using Spring.NET and ADO.NET
- Designed and developed a Java-based web application using Java Server Faces (JSF), Facelets, IceFaces, Spring, and iBatis frameworks

- System/Network Setup/Configuration: configuring and managing various physical and virtual (VMware and Amazon EC2) environments (Windows Server 2003 and Linux) including setup and configuration of networks, databases (SQL Server and MySQL), web servers (IIS and Apache), Servlet container (Tomcat), user accounts, remote desktop connections, VPNs, source control/work item tracking/release management (Subversion, TFS, Git, and CVS), and SSL in multiple environments (development, testing, staging, and production); managing build and deployment of JEE and .NET applications
- Testing: unit, integration, and system testing of web UIs, business logic, data access, and web services
- Mentoring: providing mentoring for various development team members (designers and developers) and driving code reviews
- Consulting: providing expert advice for web application initiatives, assisting an organization in achieving CMMI Maturity Level 2 and 3 for the CMMI development constellation version 1.3, and providing recommendations for process improvements, coding standards, and software engineering practices

Systems Architect/Consultant (contract)   9/2008 to 12/2008
Georgetown University, Washington D.C.

- Requirements Analysis: elicited system requirements with non-functional prototypes
- Consulting: provided expert advice for web application initiatives
- Software Engineering: designed and developed an n-layered .NET-based web application using ASP.NET 2.0 and MySQL

Associate/Software Architect   11/2007 to 8/2008
Booz Allen Hamilton, McLean, Virginia

- Government Customers: worked primarily for government clients including FBI and Millennium Challenge Corporation
- Consulting: provided consulting services for various government clients
- Software Architecture: analyzed and designed various software architectures
- Research and Development: Developed a UML profile for modeling Struts applications and a Model Driven Architecture (MDA) plug-in for Rational Software Architect to transform a Struts Platform Specific Model (PSM) into executable source code.
- Project Management: planned and managed various IT projects including risk management, scheduling, and resource allocation
- Development: developed, configured, and deployed various components including, but not limited to:
  - Plug-in for Rational Software Architect
  - Struts web components
  - XML Schemas and XML files

Software Architect/Senior Software Engineer   2005 to 10/2007
Imagine One Technology & Management, Ltd., Arlington, Virginia

- Government Customers: worked for numerous DoD clients including Navy Medicine Online, NMIMC, BUMED, M-CAST, NKO, and DEERS
- Software Architecture: analyzed and reported on existing architectures and designed new software architectures and service-oriented architectures utilizing UML 2.0, software design patterns, n-tiered architectures, and object oriented design principles. Utilized a custom designed Web architecture and development approach based on a hybrid of formal and informal techniques from multiple disciplines
- Documentation: generated Analysis Reports, Software Requirements Specifications, Interface Control Documents, Interface Design Documents, Software Design Documents, Test Plans, Test Case Specifications, Whitepapers, etc.
- Software Development: developed Web-based systems (*ASP.NET, C#, AJAX, Javascript, Coldfusion, ASP, Visual Basic, CSS*), system interfaces (XML*, Web Services, XML Schemas, Windows services*), and multimedia/video streaming applications (*Flash, Flash Media Server, Flash Remoting*) for systems such as portal frameworks, online collaboration tools, and custom Web applications using a variety of techniques including prototyping, rapid application development, waterfall model, etc. in *Windows Server 2003* environments running *IIS*
- Testing: conducted verification and validation testing for various systems
- Training: conducted internal training for development tools, software design patterns, software architectures, development approaches, etc.
- Process Improvement: involved in a company-wide initiative to improve software development processes
- Communication: communicated directly with stakeholders to elicit requirements and presented recommendations and product demonstrations directly to clients
- Database Development: developed schemas and SQL for multiple DBMS including *Oracle, SQL Server, Microsoft Access, and FoxPro*
- Reporting: generated/modified custom reports using *ASP.NET* and *Crystal Reports*
- Standards Compliance: *IEEE, DOD-STD-2167A, FIPS PUB 140-2, Section 508, DoDAF*
- Systems Design: designed secure system-to-system interfaces utilizing *VPN, SSH, and SSL* connections while conforming to strict firewall restrictions
- Development Tools: utilized *Microsoft Visual Studio, Dreamweaver, Visual Basic 6.0, Visual Source Safe, SQL Plus, MagicDraw, Microsoft Visio*
- Legacy Applications: analyzed legacy applications, provided recommendations for adaptations/redevelopment, and migrated legacy applications using reverse engineering and custom development techniques
- Team Development: divided and allocated work assignments and contributed in multidisciplinary development teams
- Dependability: responsible for recovering numerous failing projects ultimately delivering them on time and within budget without sacrificing quality

Web Developer (contract)   2004 to 2005
George Mason University, Fairfax, Virginia

- Web Development: developed various Web applications and Web services using *C#, ASP.NET, Flash Actionscript, Microsoft Access, and XML*

Assistant Webmaster/Senior Web Developer   2001 to 2005
University of Mary Washington, Fredericksburg, Virginia

- Web Development: developed and maintained custom Web-based systems, Web services, and a custom built content management system, using *PHP, ASP, VBScript, Javascript, MySQL, Microsoft Access, XML, SOAP, etc.*
- Animation: dynamic 3D interactive virtual tours using *3D Studio Max, Plasma, Flash, Flash Remoting, XML, and MySQL*

Web Developer (contract)   2003
Breg Environmental, Fredericksburg, Virginia

- Analysis: elicited requirements from client through interviews
- Web Development: developed a custom Web-based application and corresponding content management system using *PHP, MySQL, and DHTML*

3D Graphics Designer/Animator (contract)   2002
Web Equipment, Stafford, Virginia

- Animation: developed a 3D interactive animation using *3D Studio Max and Flash*

Web Developer/Systems Analyst (internship to contract)   2001 to 2002
StaffNet, Fredericksburg, Virginia

- Systems Analysis: elicited requirements and refined business goals
- Web Development: developed an e-commerce application using *Perl, iHTML, and Microsoft Access* in a *Windows NT* environment running *IIS*

Systems Developer/Analyst   1995 to 2001
Donley Technology, Colonial Beach, Virginia

- Systems Analysis: worked directly with client to elicit software requirements
- Database Development: developed applications for customer order tracking and inventory management
- Web Development: developed multiple Web applications using *Perl and mSQL* in a *Linux* environment using *Apache Web server*
- Report Production: developed dynamically generated reports
- Editing: co-author of "EH&S Compliance Auditing and Tracking Software Report," "MSDS Software Report," and "Environmental Management Information Systems Report"
- Graphics Design: designed logos and graphics for in-house and external clients using Adobe Photoshop and Adobe Illustrator

Systems Developer/Analyst (contract)   1999
Communication Workers of America, Washington D.C.

- Systems Analysis: worked with client for requirements elicitation and validation
- Database Development: developed a stand-alone system to track member information using *Microsoft Access and Visual Basic*

Publications

A Model-based Approach to Testing Stateful Web Applications
2nd International Conference on Software Testing, Verification, and Validation
Ph.D. Symposium. ICST 2009, Denver, Colorado USA. April 1, 2009.

Experience

Databases
Neo4j, MySQL, Microsoft SQL Server, Oracle, mSQL, Microsoft Access, FoxPro

Languages/Frameworks
Angular.js, Ionic Framework, Backbone.js, Marionette, iOS (Swift), JQuery, Require.js,

Javascript, HTML, CSS, ASP.NET, ASP.NET MVC, C#.NET, VB.NET, Java, J2EE, Java Server Pages, Java Servlets, Struts, Java Server Faces (JSF), Facelets, JBoss Seam, IceFaces, Spring, Spring.NET, LINQ, iBatis, DOJO, DIJIT, Enterprise Java Beans, JBoss ESB, Flash Actionscript, PHP, ASP, Visual Basic, VBScript, Perl, Coldfusion, C++, iHTML, XML, XML Schemas, XML DTDs, SOAP, JADE, JENA

Tools

Enterprise Architect, Rational Software Architect, Visual Studio, Team Foundation Server, CVS, Dreamweaver, NetBeans, Eclipse, XMLSpy, Flash, Photoshop, Illustrator, 3D Studio Max, Plasma, Visio, MagicDraw, ArgoUML, RequisitePro, Protégé