Robert "Bob" Leithiser, Ph.D.

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Profile Summary: I maximize return on investment to organizations applying expertise across all information technology areas including cloud, data, infrastructure, software, governance, and security. Through leadership, mentoring, and collaboration with key stakeholders, I develop enterprise architectures and information management strategies aligned to organizational vision, engaging with executive leadership to ensure success.

PROFESSIONAL EXPERIENCE

DCS CORPORATION, Ridgecrest, CA *2017–Present*
Information Officer (Enterprise Architect for the F/A-18 & EA-18G Advanced Weapons Lab, China Lake, CA)
Received annual review rating "Exceeds expectations" performing CIO-level responsibilities at the highest DCS individual contributor level two consecutive years.

o **Organizational Strategy/Leadership:** Developed technology roadmap for Software Modernization, SecDevOps, Self-service Reporting/Analytics and Cloud Migration. Interfaced directly with leadership reporting to the Chief Operations Officer. Interface with contractors, stakeholders, leadership, and development leads for software and hardware acquisition, vendor services, and COTS/GOTS product implementation. Provide guidance for software modernization, infrastructure renovation, cloud migration, SecDevOps, application development, data science, and data governance.

o **Software Modernization:** Provide guidance to migrate to Model Based System Engineering (MBSE) from document-centric mindset. Devised strategy for use of SysML, and DoDAF integrating Sparx, Rhapsody, and Cameo MagicDraw. Developed DoDAF views using Sparx Enterprise Architect to identify current and ideal state. Identify and prototype microservices architecture. Engaged with stakeholders and developers to formulate system-driven as well as software-driven strategies for generating code from models and models from code.

o **Platforms Infrastructure/Cloud**: Define container-oriented strategy for utilization on OpenShift, Red Hat, Docker containers and Kubernetes platforms. Engage with outside contractors and industry partners such as Microsoft, Red Hat, Gartner, Boeing to integrate software delivery with maintenance and testing of advanced air warfare systems. Ensure support of EA-18G, AV8B, F/A-18, F-35 and UAV platforms integrating Eclipse Open Systems Engineering Environment (OSEE), Azure, AWS, HPC, and milCloud. Utlize Azure Stack SDK to prototype cloud migration and develop hybrid cloud strategy. Led the organizational data infrastructure transformation from SQL Server 2008 R2 to SQL Server 2017.

o **Agile/DevOps/SecDevOps**: Led migration of repository-oriented projects from Atlassian/JIRA/Bitbucket to Azure DevOps. Lead the Azure SecDevOps continuous integration/continuous deployment pipeline (CI/CD) for automated build/testing initiative including integration into Scaled Agile Framework (SAFe). Lead the Enterprise Data Fusion Team of 6 individuals, some SA-certified, to provide the organizational SecDevOps solution including end-to-end pipeline incorporating value stream of epic->feature->story->task with scaling via SAFe Program Increments (PIs). Architected integration to Atlassian JIRA Gant chart, WIKI, and Issue Tracking. Incorporated Infrastructure as Code strategy to store deployment artifacts including PowerShell/configuration files, data management, IA scanning (Fortify) into unified repository supporting automated testing/deployment of apps.

o **Application Development:** Provided architecture to replace mission-critical ASP legacy systems with ASP.NET Core applications based on MVC, JavaScript, TypeScript, CSS, SQL, SSIS, and SSRS. Serve as system architect for asset management, planning, and scheduling system. Co-designed extensible data model to support future aircraft platforms and authored metadata-extraction platform for database and application code generation.

o **Data/Analytics:** Develop architecture for shared information repository to migrate manual data processes using spreadsheets to automated/self-service reporting and analytics integrating SSRS, Azure Data Factory, Python, 'R',

NoSQL approaches, Power BI, Tableau, and Qlik. Designed automated extraction system to integrate organizational data sources. Engage with IT to ensure information assurance conformance for sensitive and classified networks. Shifting organizational analytics paradigm from reactive to predictive. Devised machine-learning feedback framework to automate continuous improvement for a PB-sized classified Data Lake initiative.

o **Data Governance/Security:** Designed automated access management, auditing, and roles-based workflow platform integrating DoD PKI infrastructure. Provide guidance for auditing, encryption, and data quality controls. Built and implement tools to automate DISA STIG accreditation compliance. Led the upgrade of 9 major applications from non-accredited technology onto accredited technology in less than 6 months, modernizing 2008 technology to SQL 2017, IIS 10.0, and Windows Server 2016. This included the completion of over 400 STIG checklists consolidating 20 servers to 9 servers. Spearheading use of Varonis for I/A data governance.

Day-to-day responsibilities:
o Ensure Information Management, and Information Technology vision synchronized to Navy CTO directives.
o Ensure conformance to DoD and Navy Information Assurance directives including Security Technical Implementation Guides (STIGS).
o Promote organization-wide software modernization for both tactical system and operational systems.
o Ensure functional and interoperable technologies for workforce meeting information assurance requirements.
o Align Information Management objectives and programs to enterprise objectives and strategies.
o Develop and maintain enterprise roadmap for tools, technology, applications, services, and data processes.

AUTHENTIC INTELLIGENCE, Corona, CA   *2012–Present*
Founder, System/Software Architect and Principal Data Scientist
o Delivered Hortonworks training for clients covering HDFS, Hadoop, MapReduce, Pig, Hive, Ambari, Spark, Zeppelin, Data Lake, Python, Scala, and Data Science/Machine Learning topics.

o Assisted in development of Microsoft certification exams covering data, analytics, and data science including Azure Data Platform, 'R', Microsoft Azure Machine Learning, Cosmos DB, SQL Server, and HDInsight. Provided job task analysis, exam reviews, and authoring of exam questions.

o Served as chief software architect for back-end database/services design, data science and API development of mobile applications for a business intelligence solution vendor servicing health care industry. Designed a platform for custom and third-party REST APIs to support messaging, content retrieval with natural language processing, semantic web processing, BOT interfaces, and automated machine learning. Defined cloud solution integrating PaaS, IaaS, and SaaS. Platforms targeted include automated trading systems, health care, and data security.

o Built behavioral-based data security framework that imports data from all components within a security infrastructure into a central repository. The repository feeds into a machine learning system which learns from training and baselines to differentiate security threats from innocuous threats using:

  ➤ Automated pipelines for data cleansing and sharding of big data sets.

  ➤ R and Python for statistical analysis of correlations in both the staging and analytic phases with recursive framework that integrates regression decision trees in a pipelined fashion with a feedback loop. Utilize SQL Server 'R' hosting to integrate machine learning services from database queries.

  ➤ Visualization built on Microsoft Power BI incorporating machine learning insights with integration to ML Azure cloud-based machine learning framework.

  ➤ Simulative learning system to promote autonomous solving including cross-domain assertion generation, using a recursive pattern recognition and evaluation framework.

o Led architecture, design, and development of end-to-end investment management platform for research and predicting market trends. Among the innovations I developed and implemented:

- ➢ Parallel agent framework to run simulations that validate predictive models against comprehensive large-scale databases through a recognition process that pre-stages analytics processing.

- ➢ Nested virtual machine topology using ESXI, VMWare, Windows Hyper-V.

- ➢ Autonomously learning financial risk management system with automated trading interface.

- ➢ Azure Stack with Hyperconverged Cloud Infrastructure for Hybrid on-premises/cloud infrastructure.

- o Provide consulting to big data and predictive analytics firms including contract-based roles as a chief software architect and CIO/CTO.

- o Provide Business Intelligence consulting to healthcare and other industries utilizing tools and technologies to automate the delivery of data warehouses and cubes on the Microsoft platform including SSAS, SSIS, SSRS, SQL Server, and .NET.

- o Provided data security solutions mainly to healthcare companies and other firms that manage PHI/PII data. Solutions including assessment, auditing, evaluation, and security tools including Microsoft SQL Server Audit.

- o Delivery of training and courseware for Microsoft data and cloud initiatives:

  - ➢ SQL Server implementation, data warehousing, performance optimization, and administration.
  - ➢ Microsoft.NET development.
  - ➢ Microsoft Cloud technologies including Azure and Power BI with focus on big data

MICROSOFT CORPORATION   *2000 – 2013*
Principal Consultant

In principal consultant role from 2008 – 2013*,* identified software architecture and data requirements for the largest private DoD cloud (DISA) at the time. Provided technical and business leadership through proof-of-concepts, mentoring, engaging executive leadership, and leading design/development of complex applications:

- o .NET/SQL/SSIS application development to integrate web services and data sources into centralized SQL Server database partitioning 4 million Active Directory accounts integrating Microsoft's Federated Identity Management product (FIM) to support millions of entitlements for the DoD generating savings of over one billion dollars.

- o Architecture for mission-planning system that integrates simulation with predictive analytics for ongoing optimization of resources including third-party predictive analytic product integration.

- o Capacity planning for complex multi-instance clusters prescribing guidance for SAN HBA controllers, hard drive configuration, and processor/memory configuration to support high availability and scalability.

- o TFS ranger contributing TFS branching guidance and lab management product guidance.

- o Service-Oriented-Architecture (SOA) integrating BizTalk with ESB functionality, SQL Server, Active Directory Federation Services (ADFS) claims-based authentication, SharePoint with workflows, and integration with BEA via WSRP for inclusion into the predominant Navy portal at that time (NMCI).

In senior consultant role from 2004 - 2008*,* developed large-scale enterprise solutions and mission-critical prototypes for federal and state government projects. Engaged with key stakeholders, product groups, and executive leadership:

- o Tools to generate development and database components. Created deployment scripts for automating installation. System completion resulted in over $100 million incentive reward for partner.

- o Architectural and technical development leadership of scalable, multi-layer .NET application for classroom management executing on NMCI NIPR and SIPR platforms to provided delegated management for user accounts, shared storage, E-mail, patch management. Obtained SA credential assisting with lab and production deployment.

- o C++ event sink IAS Radius solution to meet government logging requirements. Performed both development and deployment on NMCI network.

- o .NET C# tools to automate System Center Configuration Manager (SCCM) and Microsoft Identity Integration Server (MIIS). Provided best practices and troubleshooting for SQL Server implementations of MIIS, SCCM, and SCOM.

- o Advanced workshops for .NET and SQL Server including capacity planning, query tuning, and N-tier architecture for environment with over 500,000 client machines/users.

- o Web interface to meet DoD mandate for Common Access Card compliance for over 450,000 users. Integrated ASP.NET, ADSI, ADO.NET to build delegated management interface.

- o Framework for hosting ASP.NET, BizTalk, SharePoint, SQL Reporting Services, App Center, MOM, Project Server on GCSS-AF framework integrated with J2EE, Teradata and Oracle. Worked with partners to design, develop, and implement BizTalk pipelines, rules engine, adapters, and accelerators including HL7 with Host Integration Services.

- o Proof of concept for speech recognition with human performance monitor interface. Developed process for automating grammar selection based on workflow state of application for a DoD advanced weapons system.

- o Designed/developed automated web services and Exchange message sink application to gather military asset data from messages and exposed by web services for classified mission system.

In consultant role from 2000 – 2004, I developed enterprise-scale applications working with key stakeholders and short deadlines on mission critical projects for education and local, state, and federal government projects. Managed risks, generated intellectual property, built scalable solutions, and provided troubleshooting of complex data and application issues. Provided best practices and tools for multiple customers across spectrum of issues including replication, clustering, log shipping, query tuning, application analysis/optimization, and locking/deadlocking large databases. Tools developed include .NET ad-hoc report generator and the Simplified Log Shipper for SQL Server resource kit.

Management Consultant, Advanced Systems Design, Montgomery, AL, 1998 - 2000
Client-server development and database consulting to the state of Alabama IT department and several agencies including the Department of Public Safety. Provided Y2K architecture review along with application analysis and remediation. VB 6 development, including driver's license issuance and applications for managing licensing, financing, and order requisition for a variety of agencies. Database application solutions including stored procedure and data layer interfaces and infrastructure solutions such as automated database backup/recovery/failover. Platforms included Windows Server NT 4, Windows Server 2000, Oracle 8, SQL Server 6.5/7.0/2000.

Independent Consultant, EnterTech, Inc. Charlotte, NC, 1992 - 2000
Client-server development using DEC RDB, Cognos PowerHouse, Microsoft Access for domains including healthcare, non-profit, H/R, donor receipting and mail list management. Platforms included DEC VAX/VMS and AS/400.

Application Specialist, Cognos Corporation. Irvine, CA, 1989 - 1991
Developed applications using PowerHouse on VAX/VMS and HP UX. Provided standardized and customized training in all levels of PowerHouse as a certified Cognos instructor receiving excellent rating.

Senior Programmer/Analyst & Project Leader, WBT, Huntington Beach, CA, 1983-1989 & 1991 – 1992
Led member financial statement project leading seven developers integrating data from 11 different subsystems payroll, donation, and member expense reimbursement. Designed common name and address system using DEC RDB with MS Access client reporting interfaces. Built COBOL application generation environment to automate creation of custom applications for donor management, donation processing, and H/R. Created tools to enable programmer productivity. Extended capabilities of DEC TPU (Text Processing Utility), developed VAX DCL command level tools, built pipeline command framework automating file system, source control, and programmer productivity interfaces.

System Developer, Innovative Data Processing, Huntington Beach, CA, 1987 - 1988
Co-authored System 1032 4GL Application Generation Environment product known as the AGE. Running on the VAX/VMS platform, the system automated development/maintenance of relational tables and generation of user interfaces based on metadata dictionary associated to relational data tables stored in System 1032.

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EDUCATION

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DOCTOR OF PHILOSOPHY, COMPUTER SCIENCE & SOFTWARE ENGINEERING   **MAY 2014**
Auburn University – Auburn, AL

MASTER OF SCIENCE, SOFTWARE ENGINEERING (MSWE)   **AUGUST 2009**
Auburn University – Auburn, AL

MASTER OF SCIENCE, COMPUTER TECHNOLOGY IN EDUCATION (MS)   **AUGUST 2004**
Nova Southeastern University- Fort Lauderdale, FL

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PUBLICATIONS, PRESENTATIONS, AND PATENTS

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- Patent 15/004,868: Method and System for Universal Problem Resolution with Continuous Improvement (2015)
- Doctoral dissertation: "A Framework for Universal Problem Resolution with Continuous Improvement" (2014)
- Microsoft Visual Studio ALM Rangers: "Visual Studio Lab Management Guide" 2012)
- Microsoft Visual Studio ALM Rangers: "Visual Studio Database Guide" (2010)
- Microsoft internal conference, TechReady "SQL Server Scalability" (2010)
- Microsoft internal "ThinkWeek" papers on a Data Model Monitoring tool and Bit Event sequences (2009)
- Microsoft Visual Studio ALM Rangers: "Team Foundation Server Branching Guide" (2009)
- ACM Southeastern Conference: "Agile Versus CMMI - Process Template Selection and Integration with
- Microsoft Team Foundation Server" (2008)
- ACM Southeastern Conference: "A Relational Database Model for Representation of Formal Specifications" (2006)
- Cognos User Conferences presentations (1992 & 1993)

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HONORS, ACHIEVEMENTS, AND AWARDS

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INDIVIDUAL

- DCS Corporation - "Exceeds expectations" evaluation for all completed years of service to date (2017 and 2018)
- DCS Corporation – Outstanding contribution award, 2018
- Microsoft Career Custom Satisfaction Metric of 8.8 out of 9.0 (2000 – 2013)
- Microsoft Employee Peer Award (2007 and 2011)
- Microsoft Outstanding Contributor (2002 – 2006)
- Cognos Guru Award, Western Region (1989)

MICROSOFT TEAM AWARDS (TOP 2 – 20%)

- Dream Team & Customer Partner Excellence Team Awards (2011)
- Big Team Award (2010)
- Top Subsidiary (2004)
- Top Industry (2003)
- Practice of the Year (2001)

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CURRENT CERTIFICATIONS AND CREDENTIALS

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- Microsoft Certified Specialist / Solution Associate (MCS/MCSA), Windows Azure Architecture
- Certified Information Systems Security Profession (CISSP)
- Microsoft Certified Master (MCM), SQL Server (one of first 30 and less than 150 worldwide)
- Microsoft Certified Solution Engineer (MCSE), Data Platform and Analytics
- Microsoft Certified Solution Associate (MCSA), SQL Server, Database Administration, Machine Learning, and Data Engineering with Azure
- Microsoft Certified IT Professional (MCITP), Database Administrator/Developer
- Government Security Clearance/System Administrator Credential

- Microsoft Certified Trainer (MCT), 2000 - 2017
- Microsoft Certified Application Developer (MCAD), Microsoft.NET, 2003
- Microsoft Certified System Developer (MCSD), 1997
- Project Management Professional (PMP), 2005 – 2009
- Oracle 8, OCPDBA, 2000 – 2002
- Microsoft Certified System Engineer + Internet, Windows NT 4.0/2000, MCSE+I, 1997 – 2003
- Microsoft Solutions Framework (MSF) Trainer, 2001 - 2004