

Robert T. Mason, Ph.D., M.B.A.
Full Professor
Anderson College of Business and Computing
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Contact Information

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Education

Nova Southeastern University, Ft. Lauderdale, FL September 2003 – August 2011

Ph.D. in Computer Information Sciences – I successfully defended my Dissertation in August, 2011. I completed a research study with a panel of seven International CIS experts that was approved by the faculty committee and the NSU IRB. The study consisted of five questionnaires which were delivered via a web-based survey tool and leveraged the Delphi technique to achieve an expert consensus. I gathered 28 ranked functional requirements for a Middleware application that help to resolve the Interoperability Gap between Learning Management Systems (LMSs) and Learning Object Repositories (LORs). Prior to beginning the study with the CIS experts, I conducted an extensive review of literature that determined the optimal architecture for this research was Service Oriented Architecture (SOA). The results of my ROL were presented at the InSITE 2010 conference in Milan, Italy and were published in the peer-reviewed conference proceedings. I also completed the analysis, design and construction of a web application using C# ASP .Net to capture the metadata needed for the data movement process. I developed a PHP prototype module that called SOA Web Services which extracted, formatted, and moved the Learning Object (LO) data across the Internet from a LMS to a LOR.

University of North Texas, Denton, TX Graduated 5/92
Master of Business Administration with emphasis in Computer Information Sciences

University of Tennessee, Knoxville, TN Graduated 6/81
B. S. in Forest Management, Minor in Business

Employment History

Full Professor and Director for the MS in Information Systems (MSIS) degree program,
Regis University, Anderson College of Business and Computing,

Denver, CO 4/2022 to present

Description: I was promoted to Full Professor in April, 2022. I am currently serving as the Director for the MS in Information Systems (MSIS) degree program. With fewer credit hours (30 hours) required to graduate and the introduction of leading-edge technology and business courses, we are confident that the new program is positioned to attract many new students that want to have careers as IT Managers, Solution Architects, System Analysts and IT Project Managers.

Associate Professor and Director for the MS in Information Systems (MSIS) degree program, Regis University, Anderson College of Business and Computing,
Denver, CO 9/2019 to present

Description: I have served as the director of the MS in IT Management (MSITM) program for the last year. I have worked with my department chair to revise the MSITM program into a new MS in Information Systems (MSIS) degree program. With fewer credit hours (30 hours) required to graduate and the introduction of leading-edge technology and business courses, we are confident that the new program is positioned to attract many new students that want to have careers as IT Managers, Solution Architects, System Analysts and IT Project Managers. The revised program has been approved by the Anderson College Academic Council, RU Academic Council and HLC. The new program will officially begin in the Fall of the 2021-22 Academic year.

Associate Professor and Coordinator for a new Specialization in Data Engineering (DE) within the MS in Data Science (MSDS) degree program, Regis University, CC&IS, Denver, CO 9/2017 to 9/2019

Description: I developed a Specialization in Data Engineering for the MS in Data Science degree. During the Fall of 2017, I revised MSDS 610 Data Engineering course to improve the course content and I revised the labs with the latest technical content on the Hadoop Ecosystem, NoSQL Databases, PostgreSQL, Anaconda Python and Spark. The Data Science program added a total of 6 new courses over the last few years for the Specialization in DE which I helped to design and implement these courses. I wrote the proposal for the new specialization that was approved by CC&IS Academic Council and the Regis University Academic Council. I was the chairperson for the CC&IS Academic Council and I was heavily involved with the Higher Learning Commission (HLC) accreditation review for 2018. I was a vice-chair on the University Assessment Committee (UAC) that coordinates Student Learning Assessment activities across the university. I developed the Learning Assurance Database (LADB) application that is a central repository for assessment data across the university (academic, co-curricular and operational units). The LADB was well received by the HLC accreditation committee that visited RU.

Associate Professor and Program Coordinator for the MS in Database Technologies (DBT) and the MS in Software Engineering and Database Technologies (SEDT), Regis University, CC&IS, Denver, CO 1/2011 to 9/2017

Description: I was the Program Coordinator for the MS in Database Technologies program at Regis University within the College of Computer and Information Sciences (CC&IS). Also, I was the Program Coordinator for the MS in Software Engineering and Database Technologies program which is a joint program with the National University of Ireland in Galway (NUIG). In addition to developing and teaching Relational (e.g. Oracle) and NoSQL database courses to the MS students, I was the advisor for 60 DBT and SEDT students. I managed the affiliate faculty, resolved student and faculty grade disputes and I managed the Database Practicum that is a four month program that simulates a real-life internship for Database Technology students. I participated as the CC&IS faculty representative on the RU President's Advisory Council (PAC) and I was heavily involved with the Higher Learning Commission (HLC) accreditation process for Regis University that was currently underway in 2018. I enhanced existing courses and developed new courses (e.g. NoSQL Databases) to keep the Data Engineering Specialization, DBT and SEDT programs current with the latest technologies.

Senior Data Architect/Data Modeller/Development DBA/PLSQL and ETL Developer/Backup Release Manager/Lead Developer for the Codesets Application, Cigna Corporation (formerly known as Great West Healthcare), Greenwood Village, CO 2/2007 to 1/2011

Description: I was the Senior Data Architect/Data Modeler/Development DBA on the Operational Data Store (ODS) team for the Facets Case Migration project and the Facets 471 Upgrade project at Cigna (formerly known as Great West Life Insurance). As the ODS data architect, I was involved in all of the projects related to ODS enhancements. My role included data modeling, DDL creation, database performance and tuning, standards adherence for DDL, DML creation for production data fixes, and the promotion of DDL/DML code using the Harvest System Change Management (SCM) tool to the various test and production environments.

In addition to data architecture work, I was involved with the following projects:

- I developed a process flow and supporting documentation for granting access to the ODS schemas. This process involves opening HPSM tickets to the DBAs with the appropriate grants.
- I made a variety of PL/SQL enhancements to the packages that support the EAI team TIBCO web services. For example, I completed the interface specification and a new stored procedure for the EIVR upgrade project.
- I was the lead developer on the ODS Codesets application for the years 2010 - 2011. The ODS Codesets application maintains reference data that is updated and released on a quarterly basis. It has over 2.5 million active codes that include medical, insurance, banking and geographic code types. I redesigned the Informatica ETL portion of the ODS Codesets application to conform to Cigna coding standards. The ETL changes involved: (a) creating new ODS staging tables, (b) the addition of mappings, sources,

targets and workflows, (c) parameterization of the new workflows, and (d) the addition of new functionality to the load process.

- I've supported the ODS release manager as a backup person and used the Harvest SCM tool extensively. I helped to test and implement the new Harvest tool configuration for the ODS team.
- I've designed and implemented the first part of the ODS Data Dictionary, although it was still a work in progress at the time I departed Cigna. This project included the development of PL/SQL packages and Informatica ETL workflows that consolidate Oracle Data Dictionary information to a central location.
- I used Visual Studio C# ASP .Net as a backup developer for the QCM application.
- I created training materials and taught classes for Oracle SQL and TOAD (Oracle development tool).

Senior Data Architect/Development DBA, Lockheed Martin Corporation, Lakewood, CO
4/2006 – 1/2007

Description: I was the Senior Data Architect/Data Modeler/Development DBA that was enhancing the Resource Ordering and Status System (ROSS) OLTP application. ROSS supported the allocation of firefighting resources throughout the USA. We were extending ROSS to interface with other government applications using Service Oriented Architecture (SOA) Web Services. The ROSS extensions facilitated the use of ROSS by other government agencies for other types of natural disasters, such as Hurricanes. In addition to the logical and physical data modelling for enhancements to an Oracle Database, I assisted the Java Developers with XML Schema creation via the use of XMLSpy. I also wrote a PERL program that parsed the enumerated (permitted) values of an XML Schema and then used the extracted data to generate reference data via Oracle SQL insert and update statements.

Senior Data Warehouse Architect/Development DBA, Echostar Communications Corporation
(a.k.a. Dish Network), Englewood, CO 7/2001 – 4/2006

Description: I was the Senior Data Warehouse Architect/Data Modeler/Development DBA that supported both Oracle (Operational Data Store) and Teradata (cLDM) Database Environments. I attended DW modelling training with both Ralph Kimbell (Dimensional Modeling) and Bill Inmon (Corporate Information Factory). I completed the first phase of a business user adhoc reporting environment that leveraged an "easy to use" query tool that is integrated with Hyperion/Brio. This project involved building materialized views that were optimized for query performance (e.g. querying 24 million subscriber rows in less than 5 seconds using any selection criteria).

Another project included building ARPU/CHURN OLAP fact tables for easy import into Hyperion Essbase OLAP cubes. I used the Teradata Data Mining tool to identify and report fraudulent accounts established by retailers/distributors.

I was involved in building of the Enterprise Data Warehouse for three years. The cLDM (Communications Logical Data Model) was a 3rd normal form data model that was purchased from NCR and then was customized for Echostar.

As Lead Architect and Manager for the four years, I authored numerous Architectural Documents (AD) and Technical Requirement Documents (TRD) at and then presented these documents at numerous IT project related meetings. As an architect, I used data profiling tools on a regular basis, such as Evoke Axio to profile the data in source columns (e.g. value frequency and column dependencies) which added value to the design process. Also, I conducted performance tuning with Oracle and Teradata. I implemented Primary Partition Indexes (Teradata PPI), secondary indexes, developed a standardized view layer, and also tuned slow running SQL via Teradata Performance Monitor or Oracle TKPROF(s).

One of the many large projects that I worked was the CRM Analytics application that was implemented at Echostar in January 2003. I worked closely with nine consultants at various points within the CRM project and designed many of the new database structures for the interim solution. This project integrated marketing demographic data (191 million US households purchased from Equifax) with Echostar Subscriber data (11 million active subscribers) and Lead Tracking data (3 million marketing leads). I was involved in designing and implementing various Data Mart star schemas in Oracle over the years.

I was the lead architect responsible for implementing DecisionPoint Applications at Echostar, which was an out-of-the-box Oracle Data Warehouse product for allowing adhoc reporting using Oracle Financials data. The data was reformatted via ETL into star schemas using Oracle functionality. This project involved supervising two consultants over a year. I made PL/SQL enhancements to the product and modified the product to support partitioned tables and bitmap indexes that improved runtime performance.

Production and Development DBA, Data Warehouse Architect, Qwest Communications
(formerly USWest Communications), Denver, CO
3/2000 – 6/2001

Description: Initially, I worked as a Data Warehouse Architect on the Revenue Information System (RIS). I was responsible for data modelling, design and performance tuning. I attended Oracle Discoverer administration training and administered the Oracle Discoverer Adhoc Reporting environment. This included creating the mapping layer between the business terms and the underlying IT infrastructure. Also I attended Cognos training and built Cognos reports for the accounting department.

Later, I transitioned to the DBA group and I was a DBA responsible for Oracle and SQL Server production databases. Activities included Oracle upgrades, creating, moving and renaming databases. Also, I monitored database performance and I conducted database tuning exercises which included reviewing explain plans (TKPROFS) with developers to improve SQL performance. I added indexes and/or partitions to production databases to improve performance.

I managed space for the tablespaces, reviewed and installed developer objects, established user ID(s) with access privileges and worked with developers to improve data models (normalization and/or denormalization). Investigated database problems that occasionally involved working

with the vendor via opening a TAR (e.g. working with Oracle Support). I taught internal Oracle database and data modeling courses to Qwest employees periodically.

Development DBA and Lead Developer, Oracle Corporation, Englewood, CO
10/1998 – 3/2000

Description: I was a Development DBA and Technical lead for the development of an ETL Data Warehousing Product for Energy (Oil/Gas) Companies. Participated in analysis sessions with Oracle Energy Customers, Oracle Energy Product Managers, and OLTP Application Developers. Documented system requirements in the Designer/2000 repository, which included the creation of star/snowflake data models, the design of the Operational Data Store (ODS) for intermediate data loading, and the design of the meta data repository required to support extraction and transformation of the data. Supervised and participated in the creation of an ETL Source Mapping Document (that mapped Oracle Energy Upstream OLTP system to the UPA Warehouse Facts and Dimensions). Completed the analysis for the financial systems source mapping (e.g. General Ledger). Scheduled and participated in the review of the source mapping document with the OLTP development teams (technical and functional reviews).

I created the ETL Application Design Document (Requirements Document) and determined the technical architecture for ETL process. Also, I created development standards for the ETL team. I generated and installed DDL for the test/production environments. I designed and coded a generic transformation module using PL/SQL that was driven by meta data. I built and executed dynamic SQL to summarize and populate the fact (and dimension) tables (similar to Informatica ETL tool). Initially I created UNIX scripts for execution of the ETL processes. I converted the UNIX scripts to Concurrent Manager Requests (Oracle Applications 11.0.3).

I modified AOL foundation (fnd) scripts to extract menus, requests, etc. I created and presented technical training for Oracle Consultants and OE Beta Customers Responsible for the transition of ETL code from PL/SQL to the Oracle Warehouse Builder (OWB). I tested OWB Beta on an instance and supported the ETL Beta Test with OE Customers.

Senior Software Developer, Logicon Information Technology Group, Denver, CO
4/1998 - 10/1998

Description: I developed financial applications for the government using Powerbuilder 6.0 and Oracle PL/SQL

Senior Consultant, Logan/Britton, Houston, TX

8/1995 to 3/1998 - Total duration of time working as a contractor (consultant) for Logan/Britton that included three contracts/assignments (see below)

USWest Communications - Denver, CO
(3rd contract - 9/1997 thru 3/1998)

Description: I developed/maintained Data Mart ETL applications and IEF Casetool applications.

Emery Worldwide - Portland, OR

(2nd contract - 12/1996 thru 9/1997)

Description: I designed and coded software components (business objects) for Emery Worldwide using IEF/Composer Casetool and Oracle. Participated in the Data Modeling (analysis) of components and UI design sessions with Emery business analysts. Worked on the following software components: Security, Location (Geography), Shipment, Activity History, and Comments.

USWEST Communications - Denver, CO

(1st contract - 8/1995 thru 9/1997)

Description: I was a developer for a financial module using the IEF Casetool, that interfaced the US West Regional Payroll application and the Oracle Human Resource application. This assignment included analysis, design, coding and testing using Oracle and DB2.

Information Engineering Consultant, Force 5, Dallas, TX

1/1995 to 7/1995

Description: I was a consultant for Texas Instruments Federal Division assigned to the Department of Defense, Logistics Development Project (JLSC) using the IEF/Casetool.

Information Engineering Consultant, Computer Consultants of Australia

9/1993 to 11/1994

Description: I was a consultant at Air New Zealand in Auckland, New Zealand. Also, I was a consultant at the Queensland Department of Transportation in Brisbane, Australia. I assisted with the development of TRAILS (Transport Registration and Integrated Licensing System) using the IEF Casetool.

Software Developer, American Airlines, Dallas, TX

8/1992 to 8/1993

Description: I was a software engineer for DIAL-AA-FLIGHT, a voice response application (IVR) that provided flight information over the phone to callers using OS/2, C++, and MS-DOS.

Developer and Team Lead, AMRIS/TS, Confirm RS Project, Carrollton, TX

3/1990 to 8/1992

Description: I was a software engineer for the Meta Data Repository (MDR). Team Lead for the screen design system (part of the Meta Data Repository), that included two PC components (a screen painting facility written in C++ and a PAL application).

Developer and Team Lead, J.C. Penney Company, Inc., Dallas, TX

4/1988 to 3/1990

Description: I was the team Lead for the development of a new Promotion Planning System (e.g. TV, Radio, Newspaper Ads) using the IEF Casetool and COBOL (used Microfocus COBOL to test on PC and deployed on Mainframe)

Systems Engineer (Developer), Electronic Data Systems, Plano, TX

4/1985 to 4/1988

Description: I was an application developer for the Health Services and TITLE XIX (Medicaid) using COBOL, BASIC, JCL and BAL (assembly language). I completed the Systems Engineer Development (SED) program. I was the lead developer for a payroll conversion for Huntington Hospital in California.

Affiliate Faculty Teaching Experience

Adjunct faculty at Regis University MS Database Technologies Graduate Program, Denver, CO

10/1998 to 05/2008

Description: I was an instructor for MSCD courses (DBA, Database Performance and Tuning, SQL, PL/SQL, Forms, & Reports). I was responsible for developing course modules and advising students with thesis projects. I received a five and ten year Service Anniversary pin from Regis University for my work as an affiliate faculty member.

Adjunct faculty member at Columbia College, Aurora, CO (evenings)

3/96 to 12/96

Description: Instructor for Systems Analysis and Design

Honors and Awards

Enhancing Student Success Award – Regis University College of Computer and Information Systems for two years in a row 2017 and 2018.

Excellence in Teaching Award - Regis University School of Professional Studies Graduate Programs for the years 2001-2002

Masters – Information Sciences Academic Recognition Award 1990 and 1991, Department of Business Computer Information Sciences, College of Business, University of North Texas

Beta Gamma Sigma, University of North Texas Chapter, 1991

Alpha Zeta, University of Tennessee, 1980

Xi Sigma Pi, University of Tennessee, 1980

The Gamma Beta Phi Society, University of Tennessee, 1979

Eagle Scout, 1976

Scholarly Activities

Publications

Mason, R. T. (2020). Newer Generation Blockchain Technology Has Added Significant Runtime Performance Improvements When Compared to 1st Generation Blockchain (Bitcoin). *International Journal of Latest Engineering and Management Research (IJLEMR)*. www.ijlemr.com. Volume 05 - Issue 09, September 2020 PP. 01-03

Sjodin, R. Mason, R. & Lotfy, M. (2020). Integrating Cloud-based NoSQL Technology and Mobile Phone Relational Databases. *Conference: 29th Annual CCSC Rocky Mountain Conference Program, Westminster, CO, October 9, 2020*

Sjodin, R. Mason, R. & Lotfy, M. (2020). Integrating Mobile Relational Databases and Cloud-based File Storage. *Conference: 29th Annual CCSC Rocky Mountain Conference Program, Westminster, CO, October 9, 2020*

Mason, R. T. (2018). Changing Paradigms of Technical Skills for Data Engineers. *Issues in Informing Science and Information Technology*. Volume 15 DOI: 10.28945/4033

Mason, R. T., Masters, W., Stark A. (2017). Teaching Agile Development with DevOps in a Software Engineering and Database Technologies Practicum. *Conference: Third International Conference on Higher Education Advances*. DOI: 10.4995/HEAD17.2017.5607

Mason, R. T. (2015). NoSQL Databases and Data Modeling Techniques for a Document-oriented NoSQL Database. *Conference: Proceedings of Informing Science & IT Education Conference (InSITE) 2015*. DOI: 10.28945/2245 p259-268

Mason, R. T. (2013). A Database Practicum for Teaching Database Administration and Software Development at Regis University. *Journal of Information Technology Education: Innovations in Practice*, 12, 159-168.

Mason, R., & Ellis, T. (2012). A Research Study for the Development of a SOA Middleware Prototype that used Web Services to Bridge the LMS to LOR Data Movement Interoperability Gap for Education. *Issues in Informing Science and Information Technology*, 9, 351-360.

Mason, R., & Ellis, T. (2011). A Research Study to Gather the Functional Requirements for a SOA Middleware Application to Bridge the LMS to LOR Data Movement Interoperability Gap for Education. *Proceedings of Informing Science & IT Education Conference (InSITE) 2011*, 259-268.

Mason, R., & Ellis, T. (2010). A Recommendation for the Use of Service Oriented Architecture (SOA) to Bridge the LMS to LOR Data Movement Interoperability Gap for Education. *Proceedings of the Informing Science & IT Education Conference (InSITE) 2010*, 43-56.

Mason, R., & Ellis, T. (2009). Extending SCORM LOM. *Issues in Informing Science and Information Technology*, 6, 864-875.

Service to the University/College

University

- University Research and Scholarship Council, 2021, 2022

- University Assessment Committee, 2015 – 2018
- President’s Advisory Council (PAC), 2014 – 2015
- HLC Criterion 4 Committee, 2015 – 2018
- Regis Business Intelligence Hiring Committee, 2012
- Developed and maintained the Learning Assurance Database (LADB) application, 2014-2022

College

- Anderson College Research Council, 2020
- Chairperson of the CC&IS Academic Council, 2018
- Chairperson of the CC&IS Graduate Learning Assurance Committee, 2017
- CC&IS Graduate Learning Assurance Committee, 2015 – 2018
- CC&IS Criteria Committee, 2014-2015
- College Professional Studies (CPS) Faculty Council, 2012 – 2014
- CPS Academic Council, 2012 – 2014

Service to the Community

- Rocky Mtn Community College (RMCC) Publicity Chairperson, 2020-2021
- Rocky Mountain Oracle User Group (RMOUG) Board of Directors, 2011 – 2018, Vice President
- STEM Mentor at Arapahoe West Highschool for two years with Goodwill Industries, 2017-2018
- Prayer Partner for two years at Unity Spiritual Center Denver, 2020-2021

Supplemental IT Training

Blockchain and IOT, Blockchain Training Alliance, 2019
 RMOUG Training Days, Rocky Mountain Oracle Users Group, 2001 - 2015
 Teradata Physical Implementation (Architecture), NCR, 2002
 Teradata Application Utilities, NCR, 2002
 PowerPlay Web and Cognos Portal Workshop, Cognos Corporation, 2000
 Perl Programming, Batky and Howell, 2000
 Actuate Developer Workbench, ITTD, 2000
 Oracle Discoverer Administration, Oracle Corporation, 2000
 Oracle8 Performance Tuning Workshop, Oracle Corporation, 1999
 Fast Track to PowerBuilder, Greenbrier&Russel, 1998
 Component Based Development Workshop, Texas Instruments, 1997
 IEF Business Area Analysis I & II, and Construction, Texas Instruments, 1990, 1992

Software Experience

Databases: NoSQL Databases (e.g. Cassandra, MongoDB, Hbase, Neo4J, Riak), Oracle 12c/11i/10g/9i/8i/7.3, Teradata V2R5 and V2R4, MS SQL Server, DB2, Paradox, Microsoft Access.

Development/Modeling Tools: Informatica Power Center 8.6.0, Visual Studio 2008 C#, XMLSpy, Oracle Designer/2000, Oracle Developer/2000, CA Erwin Data Modeler, Oracle Discoverer Administration, Cognos Powerplay and Impromptu, Actuate Developer Workbench, Powerbuilder 6.0, Texas Instruments - Information Engineering Facility (upper and lower case), Oracle Applications (Concurrent Manager), JDeveloper 3.1.1.2

Languages: Python, XML, SQL, PL/SQL, PERL, Java, C#, Unix Shell Scripts, Java Script, HTML, JSON

Operating Systems: Linux, Unix, Windows 2007/XP/NT/2000, DOS, MVS, OS2

Hardware Experience

Raspberry PI 4B Cluster, HP Superdome and V-Class (Oracle), Sun Solaris (Oracle), NCR Teradata 5380, Pentium Workstations, Data General (DG) and various IBM Mainframes