William Carroll Burkett

Professional Objectives

- Design, implement and manage an enterprise-wide application system interoperability capability.
- Develop, implement, and cultivate of semantic integration techniques and technologies to foster and promote enterprise application collaboration and interoperability.
- Apply data modelling, data mapping, data semantics and ontology design techniques to support the analysis, reconciliation, harmonization, and integration of enterprise databases and data assets to enable data-level system interoperability.

Employment

Verizon Business, Colorado Springs, Co.
August 2007 to present – Sr. App Developer
Developed data mapping specifications for transformation and exchange of data between business application systems using Contivo Analyst. Designed and developed data mapping guidelines and data governance policies. Analyzed usage of OAGIS Business Object Document (BOD) schemas used for inter-application data exchange. Managed/coordinate mapping specification development across multiple projects and systems.

Eurostep America, Inc., Santa Monica, CA.
Dec 2005 to August 2007 – (acting) President/Sr. Consultant
Manage commercial interoperability software delivery and installation. Develop requirement and design specifications and technical manuals for Web 2.0 web site. Analyzed sibling databases for compatibility and developed unified migration model. Conduct data analysis and documentation task as appropriate to support technical contracts. Conduct research. Establish Eurostep's presence in North America and build U.S. Business.

Modulant Interoperability Solutions (formerly **Product Data Integration Technologies, Inc**.), Long Beach, CA.
Dec 1991 to Sept 2005 – Senior Information Architect
Develop technical designs for commercial ontology modelling product; Analyzed ontology languages and mapped relationship among them; Developed methodologies for and provided analysis and design services related to semantic database analysis and design, enterprise application integration, interoperability, and product data exchange; Developed database analysis and design methods; Applied XML technologies to application integration; Developed and applied international data standards in building/construction and process plant design fields;

Lockheed Aeronautical Systems Company, Burbank, CA.
Sep 1988 to April 1992 – Automation Systems Engineer - Specialist
Represented Lockheed to industrial consortia and international standards development; Lead model development and model quality assurance teams; Developed and applied model quality assurance criteria and methods.

McDonnell Aircraft Company, St. Louis, MO.
Jan 1982 to Aug 1988 – Senior Engineer
Participated in Air Force contracted research on product data communication standards; Developed data models to support manufacturing processes; Represented company in international standards development community.

Education

University of Santa Monica, Master of Arts
Psychology, August 2005.

University Of Southern California, Coursework pursuant to Doctor of Philosophy
Industrial and Systems Engineering, September 1991 – December 2001 GPA 3.93/4.0
Awarded All-University Pre-doctoral Merit Fellowship.

California State University – Northridge, Master of Science
Automation Engineering, May 1991. GPA: 3.96/4.0.

The Ohio State University, Bachelor of Science
Industrial and Systems Engineering, December 1981. GPA: 3.31/4.0

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WILLIAM CARROLL BURKETT

Experience

Database and Application Integration

- Excellent and wide-ranging experience in data modelling, schema design, ontology, and database technologies; particular emphasis on data semantics and relationship between semantics of distinct data repositories.
- Developed data mapping specifications and data mapping guidelines and policies. Used Contivo Analyst for data mapping and data transformation code generation. (2007)
- Analyzed requirements/relationship of proprietary ontology to the Federal Enterprise Architecture's (FEA) Data Reference Model (DRM); wrote transformation script (using Altova's MapForce) to convert product export file to FEA DRM format. (2005)
- Developed and applied database design analysis methods to very large databases (1000+ tables) without access to, or help from, database designers, application programmers, or domain experts. The objective of the analysis and the methods is to understand the application of the database for the purpose of re-engineering it. (2003)
- Technical contributor to data mapping technology development. (2000)
- Schema development for a wide variety of domains and applications. Domains include: military logistics and configuration management data; building construction; process plant design; discrete part manufacturing and assembly; product catalogs; EDI. Applications include: data exchange; web deployment; data warehousing; B2B transactions.

Internet/Web Technology

- Excellent familiarity with current trends and efforts in Semantic Web and XML community.
- Analyzed and mapped relationships between ontology (e.g., OWL), object (UML), and schema (ER) languages. (2005)
- Developed functional design for XML Registry/Repository and conducted survey of XML technologies. (2001)

Project Management

- Managed customization and installation of Eurostep's Share-A-space product at the U.S. Army TARDEC facility in Detroit, Michigan. (2007)
- Lead/managed the functional design of an XML Registry/Repository for the Defense Logistics Information Service (DLIS). Project was successfully completed on time and under budget without major crises and to the complete satisfaction of the customer. (2001)
- Leadership of project teams within standards bodies and industrial consortia.

Engineering and Design

- Performed requirements and design analysis for a commercial ontology/database modelling software product; supported development team by testing and UI analysis. (2004-05)
- Technical contributor to development of a context-based information interoperability methodology to support the development, deployment, and application of new commercial EAI software application. (2000-2002)
- Designed binding between EXPRESS data modelling language and XML; designed software algorithm for implementation of this binding. (1999-2001)

Research

- Devised underlying, integrating foundation theory for relationship among several ontology/schema languages (2004)
- University of Southern California: September 1991 – December 2001: Coursework and research in pursuit of PhD (ABD); research on issues in Application Interoperability, Enterprise Integration, and Conflict Management. Research on integration methods that emphasize the role of data semantics and social interaction in schema design; specific research focus on theory of data mapping based on mathematical formalisms. Academic minor in linguistics.

Standards and Consortia

- Involved in development of data standards at both national and international level since 1983.
- Applied OAGIS BOD to business application interoperability. (2007)
- Major technical contributor to ISO 10303-28, specification of binding between EXPRESS data modelling language and XML encoding structure. (1999-2000)
- Project leadership within ISO TC 184/SC4; projects included the development of Application Protocols, quality management methods, and data standards integration.
- Team leader for technology consortium, 1988-1992; responsible for the development of data/information models of information communicated within and between heterogeneous CAD/CAM/CIM systems.

Training and Education

- Prepared and presented detailed technical explanations of conceptually difficult material for general audience.
- Prepared and taught class on the EXPRESS, IDEF1X data modelling language; class evaluation uniformly excellent.
- Invited/sponsored to prepare and teach series of ISO 10303 training classes by NICOGRAPH in Japan.

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Information Technology Background

Exposure to and experience with the following IT languages, methods, standards, and consortia:
XML, EXPRESS, OAGIS BOD, OWL, RDF, IDEF0, IDEF1X, XML Schema, STEP/ISO 10303, ISO TC184, PLCS, DEX, PDML, NIAM/ORM, UML, XMI/MOF, IEEE SUO, IGES, PDES, SQL, XSLT, WSDL, RUP, OASIS, ebXML, IDEF3; Ontology, RDBMS, Semantic Web, Taxonomies, EAI, Federated Databases, Data Warehouse/Data Mart; Contivo Analyst; Protegé (Stanford U.), XMLSpy/MapForce (Altova), InfeRed (Intellidimension), MS Office suite.

Publications

"The Myths of 'Standard' Data Semantics", *XML Journal*, vol. 3, no. 11, November 2002, p. 18.

"Product data markup language: a new paradigm for product data exchange and integration", William C. Burkett, *Computer-Aided Design*, vol. 33, no. 7, June 2001, pp. 489-500.

"The Question of Semantics", Proceedings of XML '00, Washington, D.C., December, 2000.

"The Integration and Interpretation of XML Schemas", Proceedings of XML '99, Philadelphia, December 1999.

"Data models as an XML schema development method", Proceedings of XML '99, Philadelphia, December 1999.

"The STEP Integration Information Architecture", William C. Burkett and Yuhwei Yang, *Engineering with Computers*, vol. 11, 1995, pp. 136-144.

"Enabling Manufacturing Enterprise Integration", in *Opportunities for Innovation: Software for Manufacturing*, National Institute of Standards and Technology, NIST GCR 94-658, August, 1994.

"The Semantics of Subtypes and Supertypes", Proceedings of the Third Annual EXPRESS User's Group Conference, Berlin, October 1993.

"The Implementation of STEP Schemas", Proceedings of the ASME Ninth Annual Engineering Database Symposium, San Diego, August 1993.

"Problems with Data Modelling Activities - A User's Perspective", Proceedings of the Second National Symposium on Concurrent Engineering, Concurrent Engineering Research Center, West Virginia University, 7 February 1990.

"PDDI Approach to Dimensioning and Tolerancing a Solid Model", Proceedings of Dimensioning and Tolerancing Workshop, Computer-Aided Manufacturing - International, Inc., Arlington, TX,rep. P- 85-ASPP-02, July 1985.