Michael Uschold, PhD, Senior Ontology Consultant

An internationally recognized expert with twenty-four years experience in developing and transitioning semantic technology from academia to industry. He pioneered the field of ontology engineering, co-authoring the first paper and giving the first tutorial on the topic in 1995 (in London). This leveraged his work creating the influential "Enterprise Ontology".

From October 2010, he has been working as a senior ontology consultant at Semantic Arts, training and guiding clients to better understand and leverage semantic technology. He has built commercial enterprise ontologies in finance, healthcare, legal research, consumer products manufacturing and corporation registration for state government. More recently he has focused on how to combine less formal knowledge organization systems such as thesauri and taxonomies with formal ontology to integrate disparate corporate knowledge assets.

During 2008-2009, Uschold worked at Reinvent on a team that developed a semantic advertising platform that substantially increased revenue. As a research scientist at Boeing from 1997-2008 he defined, led and participated in numerous projects applying semantic technology to enterprise challenges. He is a frequent invited speaker and panelist at national and international events, and serves on the editorial board of the Journal for Web Semantics, and the Applied Ontology Journal. He has given numerous tutorials and training classes, to national and international audiences.

Work History

Senior Ontology Consultant, Semantic Arts, Inc. 2010 - Present

Training and guiding clients to better understand and leverage semantic technology. Clients include Johnson and Johnson, Goldman Sachs, Broadridge Financial Services, Procter & Gamble, Lexis Nexis, Sentara Healthcare and government agencies such as the National Agriculture Library and the Office of the Secretary of State for the state of Washington. He has built commercial enterprise ontologies in finance, healthcare, legal research, consumer products manufacturing and corporation registration for state government.

Selected Achievements:

Designed and piloted a novel technique for unifying taxonomies and ontologies. Created a model in OWL for formally connecting informal taxonomies in different departments to a division wide enterprise ontology. Result: large investment bank now better able to unify disparate knowledge assets.

Created ontology for representing intra-company agreements in the finance industry. Interviewed key stakeholders, iterated through several cycles before reaching a relatively stable base. Results: used as the basis for a prototype system that was demonstrated to regulators for resolution planning. The purpose is to avoid another Lehman Brothers fiasco.

Created several enterprise ontologies in a variety of industries including the first known full spectrum ontology of health care. Conducted series of interview-model-review cycles iterating to a final ontology. Results: the ontologies are being used as the basis for follow-own projects of various kinds to unify the enterprise.

Independent Consultant 2009 - 2010

Ontology Design Pattern Wiki development and community involvement (funded by EU NEON project). Proposal Evaluator Expert, EU Seventh Framework Program. Panelist and speaker at Semantic Technology Conference June 21-25, 2010. Invited Talks: CNR (Italian National Research Council), Rome Italy, Free University of Amsterdam. Member of Scientific Advisory Board, NEON Project.

Senior Ontologist, Reinvent, Inc. 2008 - 2009

Worked on dynamic team applying large scale ontologies, open linked data, natural language processing, machine learning and latent semantic analysis to create a commercial grade categorization and contextual advertising system. Extensive experience loading and deploying open linked data, especially DBpedia, WordNet, and Wiktionary. Built tools for reverse engineering ontologies from open linked data and for detecting and correcting consistency and completeness problems. Developed large scale, ontology-driven semantic applications on (proprietary) platform: Visual Knowledge. Obtained working knowledge of GoodRelations product offering ontology.

Research Scientist, Boeing Phantom Works 1997 - 2008

Spent over a decade strategizing, evangelizing and disseminating semantic technology. Co-authored extensive state-of-the-art report on semantic interoperability and integration. Proposed, led and participated in medium and long-term research projects with strong focus on potential industrial application. Helped pioneer use of formal ontologies for semantic interoperability, which inspired future production implementations to facilitate interoperability among product design tools. Also wrote white paper summarizing potential of semantic technology for interoperability along with technology roadmap for internal customer. Led Boeing/NIST collaboration researching and implementing prototypes demonstrating how ontologies and automated reasoning can be used to improve autonomous system navigation. Helped design and implement semantic portal to improve collaboration, sharing and cooperation or modeling and simulation community.

Research Scientist, AI Applications Institute, The University of Edinburgh 1990 - 1997

Led geographically diverse team of 5 in the development, application and documentation of the Enterprise Ontology, which remains influential today. Created and gave numerous short courses on various topics in AI to industrial customers. Elicited customer requirements, designed and implemented a system using automated reasoning and ontologies to speed up troubleshooting for ATMs.

Lecturer & Research Scientist, The University of Edinburgh 1983 - 1990

Co-created intelligent front end for ecological modeling, which entailed building ecology and modelling ontologies. Taught introductory AI courses. Wrote successful grant proposal to continue existing research for additional three years.

Research Programmer, Department of Computer Science, Rutgers University 1980 - 1982

Learned in-house EXPERT system tool. Provided programming support for medical expert system for rheumatoid arthritis. Co-created expert system for advising petroleum engineer on how to use complex well log analysis software. Industrial Collaboration with Amoco.

Education

PhD Artificial Intelligence, University of Edinburgh, 1990
Masters in Computer Science, Rutgers University, 1982
BS in Math and Physics, Canisius College, 1977