

Dr. Andrew Crapo

Principal Scientist, GE Global Research

EDUCATION

- Ph.D. 2002, Decision Sciences and Engineering Systems, Rensselaer Polytechnic Institute, Troy, NY.
- M.S. 1980, Energy Systems, University of Central Florida, Orlando, FL.
- B.S. 1975, Physics. Brigham Young University, Provo, UT.

RESEARCH EXPERIENCE

Dr. Crapo is a Principal Scientist at GE Global Research in Niskayuna, NY. He has spent most of his 38-year career focused on how to capture knowledge in computable artifacts that are understandable by and can be created and maintained by subject matter experts without the traditional “knowledge engineering bottleneck”—the transfer of knowledge from the expert to a knowledge engineer. His work has spanned graphical and textual representations and with the advent of the widespread acceptance of the Web Ontology Language (OWL) he has focused on controlled-English grammars that translate directly into OWL, rules, and software requirements. He has years of experience building domain-specific languages in Xtext and translating them into formal models. He also has many years of experience building both reusable core and domain ontologies.

SELECTED PATENTS AND PUBLICATIONS

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- A. Moitra, A. Crapo, R. Palla. Concept-level Rules for Capturing Domain Knowledge. 12th IEEE International Conference on Semantic Computing, Jan 31-Feb 2, 2018.
- Siu, Kit, et al, Flight Critical Software and Systems Development Using ASSERT™, 2017 IEEE/AIAA 36th Digital Avionics Systems Conference (DASC), 17-21 Sept, 2017.
- Crapo, Andrew, Abha Moitra, Craig McMillan, and Daniel Russell, Requirements Capture and Analysis in ASSERT™, IEEE 25th International Requirements Engineering Conference (RE) 2017, Lisbon Portugal, 4-8 Sept. 2017
- A. Crapo, A. Moitra. Toward a unified English-like representation of semantic models, data, and graph patterns for subject matter experts. International Journal of Semantic Computing, Vol. 7, No. 3, 2013, pp. 215-236.
- S.J. Dill, B. Barnett, A. Crapo, A. Moitra. Method and apparatus for providing information assurance attributes through a data providence architecture. Patent # 8,495,736. July 23, 2013.
- S.J. Dill, B. Barnett, A. Crapo, A. Moitra. Method and apparatus for simulating a workflow and analyzing the behavior of information assurance attributes through a data providence architecture. Patent # 8,452,962. May 28, 2013.

- S.J. Dill, B. Barnett, A. Crapo, A. Moitra. Method and apparatus for monitoring and analyzing degree of trust and information assurance attribute information in a data providence architecture workflow. Patent # 8,281,141. October 2, 2012.
- S.J. Dill, B. Barnett, A. Crapo, A. Moitra. Method and apparatus for generating a figure of merit for use in transmission of messages in a multi-level secure environment. Patent # 8,166,122. Apr. 24, 2012.
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- A. Moitra, A.W. Crapo, M.A. Bodkin. System and method for automating the generation of an ontology from unstructured documents. Patent # 7,987,088. July 26, 2011.
- US Patent 20100251374 A1: Method and Apparatus for Monitoring and Analyzing Degree of Trust and Information Assurance Attributes in a Data Provenance Architecture Workflow, 2010.
- A. Crapo, K. Griffith, A. Khandelwal, J. Lizzi, A. Moitra, X. Wang. Overcoming Challenges Using the CIM as a Semantic Model for Energy Applications. Grid Interop Dec. 2010.
- A. Moitra, B. Barnett, A. Crapo, S.J. Dill. Addressing Uncertainty and Conflicts in Cross-Domain Data Provenance. MILCOM2010, Nov 2010, pp. 1764-1769.
- A. Moitra, B. Barnett, A. Crapo, S.J. Dill. Data Provenance Architecture to Support Assurance in a Multi-Level Secure Environment. MILCOM2009, Oct 2009.