CENTER RESEARCH SEMINAR

Combining Deep Learning Methods and Self-Directed Inquiry - Architectural Concepts

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3:00 p.m. – 4:30 p.m.
Room 150 at Science Building

Abstract

We provide an overview of deep learning from a neuro-immunological, social and machine learning perspective. A model is used to conjecture about learning disabilities specific to mathematics and science. We combine deep learning theory with a theory about how to motivate self-directed inquiry. By shifting one's perception to a self-directed inquiry, individuals are seen to overcome commonly felt anxiety. Deep architecture based on Service Oriented Architecture governance principles connects the neuroscience with core emerging technology. A model of adaptive assessment and self-directed inquiry is shown; one that supports machine mediated social discourse. Methods associated with big data analytics are discussed as a means to produce and assess individual human knowledge. The resulting complex system involves both sides of a two-sided Semantic Web.

Biography

Professor's PhD was in Pure and Applied Mathematics from University of Texas at Arlington. His Masters is in Pure Mathematics, from Southern Methodist University and is focused on abstract algebra and the history of mathematics. His post Master's training in pure and applied mathematics focused on real analysis, topology and numerical analysis. This work was applied to modeling the neurology of systems that learn, the intent of half of his 1988 PhD dissertation in Pure and Applied Mathematics. The other half is on discrete computing systems. He served as Research Professor in Physics at Georgetown University (1990-1994) and Research Professor of Cyber Security at George Washington University (1998-2000). He served as Distinguished Scientist at Norwich University. He was been awarded grants and contracts on digital immune systems, systems of smart agents, algorithms applied to massive unstructured data sources, or in support of international conferences in Behavioral and Cognitive Neuroscience (BCN). He served as consultant for government agencies. Beginning in 2006, he revisited systemic properties of the crisis in American education. As a result, a theory is produced having neurological, sociological and technological applications. The underlying formalism may be traced into applied semiotics, theory of sign systems, and expressed using quasi-axiomatic theory developed from the work of C S Peirce and J. S. Mill. He publishes in Service Oriented Computing and on issues related to the crisis in education. He has on-going discussions with individuals serving on IT standards bodies.