Abstract:
In this talk, I will summarize my new book, which has the same title as the talk. Non-Axiomatic Logic (NAL) is a formal logic that attempts to capture the laws of human thinking, for the purpose of reproducing the process in computer systems to achieve Artificial General Intelligence (AGI). Different from the classical logic, NAL is designed for systems that have insufficient knowledge and resources with respect to the problems to be solved. For this reason, NAL is radically different from the classical logic in all major components: it uses an experience-grounded semantics, rather than a model-theoretic semantics; it uses subject-copula-predicate sentences, rather than predicate-argument sentences; it uses syllogistic rules, rather than truth-functional rules. Consequently, the logic shows many human-like properties, and provides uniform solutions to many problems in Artificial Intelligence and Cognitive Science. Beside the major components of NAL, I will also address the current implementation and potential applications of this logic.

Bio:
Pei Wang is an Associate Professor (Teaching/Instructional) in the Department of Computer and Information Sciences of Temple University. He received his B.S. degree and M.S. degree in computer science from Peking University, in 1983 and 1986, respectively, and his Ph.D. degree in computer science and cognitive science from Indiana University, Bloomington, in 1995. Before joining Temple University, he worked in industry for several years. His research focuses on unified theories of intelligence, formal models of rationality, reasoning under uncertainty, learning and adaptation, and real-time decision making. He is the Chief Executive Editor of the Journal of Artificial General Intelligence and the Vice Chair of the Artificial General Intelligence Society.