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Intelligence's origin and theoretical modeling

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ABSTRACT

Artificial Intelligence (AI) is usually defined as the science and engineering of making intelligent machines. AI experts do not confine themselves to practice and bring into question the very nature of intelligence. To win this intellectual and scientific challenge, AI experts should be backed by a solid theoretical base in particular Theoretical Computer Science (TCS) should furnish the notions necessary to explore the advanced properties of machines. Unfortunately this support does not seem to be adequate to the scopes. TCS illustrates every aspect of the computer system by means of formal theories although these theories are narrow, disjointed and abstract. How can AI experts answer profound questions about intelligence when the views of the computer and the brain prove to be fragmentary and insufficient? As an assumption how a unifying scientific theory begins with a simple concept and details all the phenomena occurring in the field through an inferential process. Step by step the theory justifies technical achievements and natural events. For example, mechanics is a unified body of knowledge that introduces the concept of speed. Then experts derive the notion of acceleration from it, in turn the notion of force, work, energy and so forth. A set of interconnected conclusions illustrates the entire domain and disentangles any conundrum through deductive reasoning. The structure of a theoretical construction in engineering and science has nothing to do with philosophy. Frame which kept forward, begins with the formal definition of the elementary piece of information which as assumed distinguishable and meaningful.

Biography

Paolo Rocchi has received a Degree in Physics from the Sapienza University of Rome in 1969 and was associated to the Institute of Physics as an Assistant Lecturer. The following year he joined IBM as a Docent and Researcher. He has carried out research and is still active in various fields of computing including software evolution, computer security, education, information theory, fundamentals of computer science, artificial intelligence and software engineering. He has written over one hundred and thirty works, including a dozen books. Upon retirement in 2010 he was recognized as an Emeritus Docent at IBM for his achievements in basic and applied research. He is also an Adjunct Professor at University LUISS Guido Carli. He is a Founder Member of the Artificial Intelligence Italian Association and a member of various scientific societies. He has received recognition even beyond the scientific community in the mass media.