

Seeing beyond Computer Science and Software Engineering

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Abstract. The boundaries of computer science are defined by what *symbolic computation* can accomplish. Software Engineering is concerned with effective use of computing technology to support automatic computation on a large scale so as to construct desirable solutions to worthwhile problems. Both focus on what happens within the machine. In contrast, most practical applications of computing support end-users in realizing (often unsaid) objectives. It is often said that such objectives cannot be even specified, e.g., what is the specification of MS Word, or for that matter, any flavour of UNIX? This situation points to the need for architecting what people do with computers. Based on Systems Thinking and Cybernetics, we present such a viewpoint which hinges on Human Responsibility and means of living up to it.

Bio: Professor Kesav Vithal Nori is executive Director and executive Vice President of Tata Consultancy Services (TCS) and is one of the pioneers of TCS's computer-based adult literacy programme which has been successful all over India and in South Africa. Nori's research interests include: programming languages and compilers, meta tools and derivation of tools for software processes, modeling, simulation and systems engineering applied to enterprise systems. Nori has a distinguished career that has alternated between academics and industrial research within TCS. Previously, Nori was with the Tata Research Development and Design Centre (TRDDC), the R&D wing of TCS. Nori received his MTech from IIT Kanpur where he continued to work as a senior research associate from 1968 to 1970. Nori then became a research scientist at the Computer Group in the Tata Institute of Fundamental Research (TIFR). He then returned to teach at IIT Kanpur. In addition, Nori was Visiting Faculty at Carnegie Mellon University (CMU) in Pittsburgh, USA and finally returned to TRDDC and TCS.