

# Human centered computing for future generation computer systems

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## 論文要旨

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## 論文の要旨

The computer science is now mainly achieved by scientific circles and constitutes a kind of indicator of the position of centers dealing with this area. This is because nowadays one cannot talk of highly developed scientific units or world-class achievements in various disciplines of knowledge if one does not conduct research in computer science (whether technical or mathematical). The development of computer science is now so rapid that new solutions are necessary to understand the new directions and new stages. The purpose of analytical approach is to show that for an in-depth analysis of data, the layers of semantics contained in these sets must be taken into account. This approach is possible by combine the subjects of information systems and many types of analysis as well as aspects of the human analysis processes.

Computer systems are oriented to many kinds of different processes for example collecting, analysis and transmitting data for many different transmitting points. Also computing processes are realized by those types of systems. The new paradigms of computing methods are oriented by use of human aspects for definition new types of computer systems. Human centered computing are proposed for definition future generation computer systems.

The basis of proposed human centered computing methods are the new

paradigms of use of knowledge. One of them – the main paradigms – is grounding knowledge paradigms. This paradigm will be proposed by Author of this dissertation and after evaluation of this parts of theory, will be describe step by step. Generally, the grounding knowledge paradigm will be defined for construction new stage of knowledge. Basis of this theorem is the knowledge based on human centered processes of data analysis. Those types of analysis create new computing methods concentrated by human aspects of computing processes. The main solution of proposed methods is creation of future generation computer systems by used new computing methods.

The interdisciplinary nature of the solutions proposed means that the subject of computer systems forming part of informatics becomes a new challenge for the research and application work carried out.

The thesis is organized as follows: First, in chapter 1, the objectives and contribution of this thesis are presented.

In chapter 2, the authors presents the fundamentals of computing approaches in computer science, especially basic formalisms of computing methods, known techniques of data analysis. Also, intelligent computer data analysis methods and computational intelligence aspects will be described.

Chapter 3 presents the human centered computing methods with selected aspects of human methods of data analysis and new definition of grounding knowledge. Also, grounding knowledge algorithm in computing theory and new computational paradigms for computational systems and distributed computing will be presented.

In chapter 4, the authors discusses future generation computer systems, as well as human computing algorithms for new classes of computer systems and new generation computer systems.

In chapter 5, the author presents the conclusions, results and suggested future work.