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**INTRODUCTION TO THE ISSUE:
CONTEMPORARY PHILOSOPHY OF INFORMATICS**

We have intentionally included the word “informatics” in the title of this volume, as distinct from “computer science”, because the philosophical reflections it contains go beyond the relatively narrow domain of what the latter refers to. There is, at present, an increasingly noteworthy tendency to use the term “informatics” to describe a broad field of research into the processing of information by various types of system – not just computer systems, but also animate or social ones. This also includes the interdisciplinary study of the concept of information itself.

We also use “informatics” here to emphasize the centrality of the concept of information within computer science itself. After all, man-made computer systems are used for the algorithmic processing of information encoded in various different ways. In other words, information is what algorithms, and the computer programs created in order to implement them in practice, are applied to. Moreover, algorithms and programs are themselves nothing more than appropriately organized “packets” of information: ones that on the one hand can be used to control the processing of other pieces of information, and on the other can be subject to transformations leading to new (e.g. more effective) informational content.

The content of the present volume can be divided into three parts. In the first, which includes five papers, the authors refer to the scientific core

of informatics, which is, after all, computer science. Taking a methodological and philosophical approach, they analyze such issues as the nature of computation (from an extensional and an intensional perspective), computability (within standard and non-standard models of computation), and algorithmicity. In this part, an important link between computer science and philosophy is furnished by the famous Church-Turing thesis, which postulates that all functions that are effectively computable, and consequently also the problems solvable using them, are computable/resolvable with the use of the universal Turing machine. At least three authors are critical of this thesis, taking a closer look at non-standard computational techniques, such as analogue or evolutionary ones. In this way they step beyond the domain of traditional computer science, whose boundaries are defined by Turing's model of computation.

The second part of the volume includes two texts devoted to the concept of information, where this is considered independently of computational methods of data processing. Information is treated here as an intuitive, pre-scientific and fundamental concept – as fundamental as the concepts of force, energy or matter. At this fundamental level, the authors delve into general ontological issues, such as the problem of informational identity, the necessity of the existence of a material carrier of information, and general properties of information metabolism (taking the theory of Kępiński as an example that can serve as a basic point of reference). Some of these issues are discussed by focusing on such currently relevant topics as computational virtual objects or data smog.

In the third part of the volume, which includes the last four articles, the authors focus on both actual and potential applications of modern computing techniques. These pertain to resilient IT systems, robotics, natural-language processing and medicine. This part reveals the heuristic potential of philosophy as a discipline that inspires, and sometimes also directs, some very specific applications of computer science. The best exemplification of this is provided by ethical ideas, which – through such appropriate models as those of ethically sensitive robots (phronetic robots) or values-preserving IT systems – can successfully impact the sphere of technology and its applications.

We would like to thank the Authors for their unique contributions to the philosophy of informatics as a relatively new branch of philosophy. Equally warm thanks are due to the organizers and attendees of the international conference series “Philosophy in Informatics”, in the course of which, in various years and places, preliminary versions of the papers comprising the volume were discussed.