### 500 FOUNDERS OF THE 21ST CENTURY



DR DONG-KEUN SHIN, IOM

**IBC Honours Include** International Order of Merit - 1999

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# Personal Endorsement from the Director General of the IBC:

Dr Shin is considered to be an outstanding Computer Scientist and has been recognised as such by the IBC in Cambridge, England since 1998.

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## **DR DONG-KEUN SHIN, IOM**

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Dr Dong-Keun Shin has proclaimed that if no challenge occurred, he would lead people in computer science from the beginning of the 21st century, declaring an open battle for leadership. He thinks that a person with theory, to be a world leader, needs to demand that people in his field stop competing and admit defeat. Born on June 13, 1959, he grew up in Seoul, Korea. In his youth he learned both geometry and calculus to acknowledge that calculus is the theoretical world of Sir Isaac Newton and geometry is that of Euclid. He also wished to have his own theoretical world. For better education, he emigrated with his family to the USA in 1978. He became a US citizen in 1987.

While he was attending Los Angeles Valley College, he had his first hands-on experience of a computer. He chose computer science as his major and studied at the University of California at Berkeley and at the George Washington University. He worked as a math tutor in Los Angeles Valley College's Learning Centre. He worked for the EECS Department at UC Berkeley as academic computing co-ordinator during his junior and senior years. He lectured in both computer hardware and software courses at George Washington University in his graduate years. As an engineer, analyst or programmer he worked at several companies in suburban areas of Washington DC and Seoul.

While surveying hash functions for his doctoral dissertation, Dong-Keun Shin verified for the first time that there is no distinguishable difference between the performance of one relatively good and data independent hash function and that of another. He coined the term "phenomenon of relatively good (RG) solutions" in reference to the verification. Based on the first verification of the kind, he developed the hypothesis that the phenomenon of RG solutions is present in each group of polynominal time solutions for complex problems that basically require exponential time algorithms as solutions. His verification shows that no matter how fast computers can calculate, they cannot solve such complex problems in polynomial time. Dr Shin's significant contributions also include his discovery and proposal of best algorithms in the areas of sorting, hash functions, massive cross-referencing or the join operation, and polygon clipping. His papers show that his algorithm for massive cross-referencing or the join, with its several versions, is the best of its kind to date and Shin's (mapping) hash function is the best hash method.

In early 1997, Dr Shin challenged the world's academic communities and computer scientists to refute the legitimacy of his verification and discoveries as well as his claim to achieving the greatest contribution to computer science. For the purpose, he sent more than 5,000 letters to about 170 countries in the world. Each nation's one or two highest political leaders, minister of education or equivalent, and heads of major universities and colleges, received his letter at that time. He also needed the mailing action to verify the ownership of his ideas and to prevent any plagiarism. He has encountered no serious challenge as yet.

In addition to his previous achievements that led to his claim to the world computer science leadership, Dr Shin discovered a new sorting algorithm on 3 July 1998. The Shin sort, named for him and his family, is the best solution to sorting and searching. By solving the most important problem in computer science, he secured his victory in the battle to be the greatest founder in computer science and related technologies. Dr Shin was happy about his new theoretical world, sorting and searching. Shin sort and search database systems will make Shin's tree data structure in main or local memory for very fast text/image/sound data retrievals. The new database systems will take computers into a new era of optical speed networking. As the world computer science champion and the discoverer of the new sorting method, he sent letters to 1,200 press-related organisations worldwide in April 1999 for his first press release.

Further information about Dr Shin's achievements is given in his website: www.dkshin.com and in his research collection entitled "A Collection of Research Processes for Genealogy and Proofs", which have been submitted to the chairperson of the EECS Department at the University of California at Berkeley. Dr Shin has been

invited to be a member and a founding member of the International Order of Merit and American Order of Excellence respectively. He would like to be their member to participate in setting the order for scientists and students. Students, as Dr Shin hopes, will apprehend his foundation stone of understanding theoretical world, which was laid by Dr Shin who has eagerly worked for his own. The students will also realise that a man can earn a theoretical world if he seriously aims at theory and makes every effort to create his scientific world.

