# Preface: Quantum Informatics for Cognitive, Social, and Semantic Processes

**Peter D. Bruza, William Lawless, Keith van Rijsbergen,
Donald A. Sofge, and Dominic Widdows**

Quantum informatics (QI) is an emerging branch of quantum information science, and has recently been applied to challenging computational and modeling problems in artificial intelligence. While the application areas addressed typically operate at a macroscopic scale and could not be considered quantum in a quantum mechanical sense, they may share many key properties with quantum systems.

This symposium brings together researchers interested in how QI interfaces with, or can be applied directly to solve problems with AI in non-quantum domains more efficiently or to address previously unsolved problems with AI in these other fields. The following broad content areas were specified in the call for papers:

- Semantic representation and processing
- Cognition and Brain (memory, cognitive processes, neural networks, consciousness)
- Logic, planning, agents and multi-agent systems
- Information processing and retrieval
- Decision theory (political, psychological, cultural, organizational, social, etc.)
- Biological or complex systems
- Social Interaction
- Finance, economics, and social structures (e.g., organizations, institutions, cultures)

This technical report includes 17 long papers and 3 position papers. Each paper was thoroughly reviewed by at least three members of the international programme committee. The proceedings highlight the cross-disciplinary nature of quantum interaction with papers covering topics such as computation, cognition, decision theory, information retrieval, information systems, social interaction, computational linguistics and finance. In addition, we are honoured to receive a keynote presentation on day 1 by Professor Pennti Kanerva (Stanford University), and an invited talk on day 2 by Terry Bollinger (ONR/MITRE).

Finally, welcome and we look forward to a stimulating symposium!