

Vortrag (engl.)

Intelligent Multi-Agent Systems in Adaptive Service Provision

Prof. Ryszard Kowalczyk

(Swinburne University of Technology, Melbourne, Australien)

Zeit: 06.02.2008, 11:15 - 12:45 Uhr

Ort: Raum 309, Marschnerstr. 31

Thema/Abstract:

In this talk Prof. Ryszard Kowalczyk will address distributed decision-making and negotiation capabilities of intelligent autonomous agents and their applications in managing complex service provision. After a short introduction to intelligent agents and service-oriented systems, he'll present an agent-based approach for adaptive management of aggregated service provision on-demand in the Web/Grid environment. It includes agent-based composition planning, service discovery through coalition formation, multi-party service level agreement negotiation, end-to-end quality-of-service monitoring, and exception handling through dynamic re-selection, re-negotiation and re-planning. Some aspects of distributed planning, coalition formation, negotiation and adaptation mechanisms for intelligent agents based on distributed constraint optimisation, fuzzy constraint reasoning and predictive decision-making will be presented in more details. They will be demonstrated with selected simple application scenarios in e-commerce trading, service contracting, applications on-demand, and supply network coordination. In concluding remarks, Prof. Ryszard Kowalczyk will outline some open problems, further research and applicability of intelligent multi-agent systems in different domains including distributed resource allocation, virtual environments and peer-to-peer networks.

Referent/Presenter's Bio:

Prof. Ryszard Kowalczyk is the Foundation Director of the Swinburne Centre for Information Technology Research (CITR) and a Full Professor of Intelligent Systems in the Faculty of Information & Communication Technologies, Swinburne University of Technology, Melbourne, Australia. Before joining the University in 2003, he spent several years with Commonwealth Scientific and Industrial Research Organisation (CSIRO) and corporate R&D divisions of multinational companies in Australia and overseas. Prof. Kowalczyk's research interests include intelligent systems, agent technology and service computing, and their applications in building and managing open, large-scale, distributed systems such as service-oriented systems, virtual enterprises, collaborative e-business and smart environments. He has authored 4 patents and some 120 articles in refereed journals and conference proceedings, chaired and organized 10 international conferences and workshops, and been involved in the steering and program committees of some 100 conferences. Prof Kowalczyk has served as a member of IEEE SMC Technical Committee on Self-Organization and Cybernetics for Informatics, Advisory Board and Scientific Committee of the International Artificial Intelligence Knowledge Society, Editorial Board of International Journal on Multi-agent and Grid Systems, International Review Board of Journal of E-Commerce in Organisations, Advisory Board of the International Transactions on Systems Science and Applications, and 4 IEEE FIPA WGs on agent technology standardisation. He has successfully led more than 30 R&D projects funded by competitive grants and industry in excess of \$17 million, delivering significant research and commercial benefits. Recently he has been instrumental in establishing and leading the largest AU-DEST funded project for international research collaboration in agent-based service-oriented computing in Australia that is one of the largest single university based projects in that area internationally.