Multi-agent programming : languages, platforms, and applications /

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Monografía

Multi-Agent Programming is an essential reference for anyone interested in the most up-to-date developments in MAS programming. Programmers, researchers, and graduate students will find this text unique in its presentation of the concepts and principles of this fast-growing field. While previous research has focused on the development of formal and informal approaches to analyse and specify Multi-Agent Systems, this book focuses on the development of programming languages and tools which not only support MAS programming, but also implement key concepts of MAS in unified frameworks. Part I describes four approaches that are based on computational logic or process algebra--Jason, 3APL, IMPACT, and CLAIM/SyMPA. These programming languages have formal semantics and use heavy machinery based on formal methods, but also provide working platforms for the development of multi-agent systems. Part II presents agent languages and platforms that extend or are based on Java--JADE, Jadex, and JACKTM. Although these have no formal semantics, the languages are well documented and the platforms provide a variety of tools that have been extensively used in practice. Part III provides two significant industry specific applications--The DEFACTO System for coordinating human-agent teams for the future of disaster response, and the ARTIMIS rational dialogue agent technology. The book also features seven appendices, summarising each of the agent programming languages, hence facilitating comparison of the approaches. In particular, Appendix A describes the criteria used for comparing the agent languages and platforms

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