Building Practical MAS Applications Using the VOWELS Method

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Abstract

Multi-agent systems (MAS) have now existed for more than 30 years… In the first 10 years, the community was asked to build usable MAS… In the following 10 years, it was asked to build useful MAS… We are now in the concluding time to build MAS that are regularly used. This talk is willing to bridge the gap between methodology and practice of used multi-agent systems. We first discuss the VOWELS MAS paradigm introduced for design purpose in the 90's. We show how it has evolved from design to programming towards multi-agent oriented programming. Such a traditional way of design and programming multi-agent systems has been highly successful and we illustrate this with different examples including cartographic generalization, luggage handling, geomediatic news analysis and biorobotics. We then argue that the design of used MAS can be very different depending of the application domain, which requires a better attention to the end-user and grounds on limited elements of the theory. We discuss the role of the end-user within the VOWELS paradigm and we exemplify it in the domain of interactive games. We illustrate it through examples including decentralized assistants, intelligent playgrounds, artistic creation, and health informatics. Playing with the vowels and including the end-user is not only an intellectual exercise; it also contributes to the evolution of computing towards creativity concerns, and more generally to the service to the person. This line of thought is driving our agenda of research work for the next years as well as it ethically drives the MAS community towards practical applications.

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