

Guest Editors' Column

Collaboration and Interaction in Varied Environments: Guest Editors' Introduction to the Special Issue

Groupware is a term that was first used a few decades ago, but its importance and relevance have not waned. If anything, the term has expanded in meaning and we now have many conferences and journals devoted to the broad area of computer-supported collaboration. One of those conferences is the International Workshop on Groupware (CRIWG), first held in 1995 in Portugal. The workshop began among computer scientists interested in groupware and was uniquely characterized by its small size, interactive conversation, and emphasis on social interaction for community building. In 2006, the workshop – which by this time had broadened and expanded on its computer science roots – was held in a medieval castle in Medina del Campo, Spain, and it is from that event that the papers for this special issue were invited. Each invited paper underwent further development, substantial revision, and additional review for this special issue.

We are delighted to present to you a set of papers that address central problems in collaboration and interaction in a variety of computer-supported environments. We begin this special issue with an article by Julita Vassileva and Lingling Sun, “Using Community Visualization to Stimulate Participation in Online Communities.” Vassileva and Sun address one of the most persistent challenges in online communities, namely the ability to sustain participation and on-going contributions within the community. The authors focus on visualization as a key to this challenge and ground their study in the theory of social comparison. Two different versions of a visualization tool are tested, and a very interesting and extensive analysis of the communities provides insight into the importance of this approach.

The next two articles are set in the important context of learning environments. José Antonio Marcos, Alejandra Martínez, Yannis Dimitriadis, and Rocío Anguita focus on enhancing collaboration through supporting roles, in their article titled “A Role-Based Approach for the Support of Collaborative Learning Activities.” The authors present a framework for characterizing roles that different people play in collaborative learning contexts and then provide an analysis of two experiences that show that framework in action. Their results show how dynamic role transitions during group interaction can be analyzed and emergent roles can be identified. Overall, the analyses and framework provide a unique perspective on how people within collaborative learning environments can better understand their own roles, as well as those of others, and then use that understanding for continuous improvement of interaction.

The third article in the special issue, “Supporting Polyphonic Collaborative Learning,” is by Stefan Trausan-Matu, Gerry Stahl, and Johann Sarmiento. These authors use the creative idea of applying music theory to the context of computer-supported problem-solving. The theory of polyphony is used in music to explain how different voices jointly construct a melody. In the context of learning, the theory of polyphony can be applied to show how learners adopt different positions and ultimately construct a shared solution. The authors report on the tools they implemented to help visualize this process and thus support both teachers and learners in their efforts to improve collaborative problem-solving.

In the fourth article, we turn to yet a different theoretical perspective, that of collaboration engineering. “Collaboration Engineering in Distributed Environments,” by Halbana

Tarmizi, Matt Payne, Cherie Noteboom, Chi Zhang, Lucas Steinhauser, Gert-Jan de Vreede, and Ilze Zigurs, takes a theory that has been examined primarily in face-to-face computer-supported groups and looks at how it might be applied in virtual, or distributed, teams. Collaboration engineering focuses on providing guidelines for structuring the process of group interaction, and this article reports on the design, development, and feasibility testing of a prototype of these guidelines in the context of a virtual team. Insights on team processes and leadership are provided, along with challenges that are faced in both implementation and research.

The fifth and final article, “On the Move Collaborative Environments: Augmenting Face-to-Face Informal Collaboration in Hospitals,” is by David A. Mejía, Alberto L. Morán, Jesus Favela, Monica Tentori, Antoine Markarian, and Luis A. Castro. These authors take on the central problem of mobility in collaborative work, in this case in the context of a hospital and medical workers, but the ideas can apply to any context where people are on the move and expecting to stay in touch with one another through a variety of mobile devices. The challenge is to be able to provide a seamless environment from the user’s perspective, even though a wide variety of devices may be in use. This article has both design and implementation implications, and the results point to important issues that must be taken into account in supporting mobility in these kinds of collaborative environments.

The guest editors wish to thank the organizers and participants of the CRIWG 2006 conference, from which the early versions of these papers were invited, as well as the reviewers who helped to further assess the new developments that are reported in this special issue. We hope you enjoy the work that these authors have done as much as we did and that their contributions bring you new ideas in this persistently rich field of research.

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