Editorial

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Biographical notes: Maha Abdallah received an MSc Degree in Computer Science from Pierre and Marie Curie University in 1996, and a PhD (Honours) Degree in Computer Science from the University of Versailles in 2001. She then spent a year at the University of California, Santa Barbara (UCSB) as a Post-doctoral research fellow in the Database Systems Lab (DSL). In September 2002, she re-joined Pierre and Marie Curie University as an Assistant Professor in the Department of Computer Science (LIP6). Her research interest is broadly in the field of distributed algorithms, with a current special focus on networked virtual environments, massively multiplayer online games, dynamic systems and networks (P2P, Ad-hoc, etc.), and distributed systems and databases.

Mark Claypool joined Worcester Polytechnic Institute (WPI) after completing his PhD in Computer Science from the University of Minnesota in 1997. His PhD Thesis, Quality Planning for Distributed Collaborative Multimedia Applications, included methods for predicting the performance of multimedia applications based on a user-level quality model. He received tenure and promotion to Associate Professor in 2004 and promotion to Full Professor in 2009. His overall research interests include multimedia networking, congestion control, network games and information filtering.

Tristan Henderson is a Lecturer in Computer Science at the University of St. Andrews in Scotland. His research aims to better understand user behaviour and use this to build improved systems; an approach which has involved measurements and testbeds for networked games, Wireless networks, mobile sensors, smartphones and online social networks. He serves on the JANET UK Wireless Advisory Group, the steering committee of the NetGames workshop, and is co-PI of the CRAWDAD wireless network data archive. He holds an MA in Economics from Cambridge University and an MSc and PhD in Computer Science from University College London.

Networked games are a fast growing sector in the gaming field, with a market that is now worth more than $1 billion in western countries. Another important facet of networked games' success is that they are allowing not only economic factors to seep through, but social and cultural ones as well. Important efforts are put into leveraging networked games technologies toward educational, cultural, social, environmental, or even humanitarian ends. Applications in these domains will clearly continue to grow. This clearly poses new challenges on the underlying network and system architectures, and introduces new research questions that require synthesis of a variety of research areas.

The Network and Systems Support for Games (NetGames) workshop is a major forum that was first held in Braunschweig, Germany in 2002 in an attempt to bring together researchers and developers from both academia and industry to discuss and understand the network and systems issues in networked games, an application that at the time was extremely popular, and yet overlooked by the multimedia community. Since then, networked games have become an active and mainstream area of research, with games papers appearing at venues such as ACM SIGCOMM and ACM Multimedia, but NetGames has continued to flourish as a venue for presenting early and exciting work. The eighth iteration of the NetGames workshop was held in Paris, France in November 2009. This special issue presents extended versions of six selected papers from this event.

The first two papers deal with NETWORK OPTIMISATIONS FOR GAMES. In the first paper, "Optimisation of capacity in various 802.11 gaming scenarios", the authors use the Markov model to predict the capacity of an IEEE 802.11 local network to support the multiplayer real-time games under various configuration scenarios, and then investigate how 802.11e enhancements can increase capacity and overall performance. The second paper, "Bandwidth-aware Peer-to-Peer 3D streaming", studies the issue of bandwidth utilisation for P2P 3D object streaming in Networked Virtual Environments (NVEs), and proposes a Bandwidth-Aware Peer selection Strategy (BAPS) that reduces the request latency by having bandwidth allocation channels and relying on more content sources beyond AOI neighbours.

The following two papers tackle important issues related to MASSIVELY MULTIPLAYER ONLINE GAMES (MMOGS), in which hundreds of thousands of players are connected together and share a common sense of space and time. The third paper in this special issue, "Reducing game latency by migration, core-selection and TCP modifications", tackle the important issue of game latency in region-based MMOGs, and propose a prototype implementation of a core selection and object migration middleware platform for TCP-based MMOGs. The proposed middleware supports migration of

partial game-state to servers that are dynamically selected according to the majority of the players' locations, where the level of game-state granularity can range from entire virtual regions, to instances, or single objects in the virtual world. The fourth paper, "The impact of virtualisation on the performance and operational costs of Massively Multiplayer Online Games", investigates the cost of using cloud-based virtualisation for MMOGs as well as its impact on game providers and players. Through trace-based simulation and empirical experimentation, the authors assess the impact of provisioning virtualised cloud resources, analyse the components of virtualisation overhead, and compare provisioning of virtualised resources with direct provisioning of data centre resources.

The last two papers of this special issue study the IMPACT OF AVATAR MOVEMENT & PLAYERS' BEHAVIOUR ON GAMES. The fifth paper, "Group movement in World of Warcraft Battlegrounds", presents an analysis of avatar movement in battleground scenarios by checking whether the movement patterns fit into waypoint, hotspot, and group movement models. It is shown that only hotspot describes battleground behaviours well, while both waypoint and group fail to characteristically describe avatar movements in general. Finally, the last paper, "Why MMORPG players do what they do: relating motivations to action categories", presents an analysis of the relations between players' motivation and behaviour in a Massively Multiplayer Online Role-Playing Game (MMORPG). Players' behaviour is examined in terms of when, how much, and what they do in the virtual world. The paper shows that a better understanding of the relations between players' behaviour and the generated network traffic can be used for improving MMOGs' network traffic prediction models.

At the end, we would like to express our gratitude to all the reviewers of this special issue, as well as all the NetGames 2009 TPC members whose feedback and rigorous observations and comments directly influenced the high quality of the papers.