PREFACE

Map-based interfaces and interactions.

This focus section aims to highlight the role of maps as a physical, theoretical, and metaphorical framework for interaction design and architecture, by promoting interdisciplinary collaboration among researchers, designers and practitioners interested in map-based interfaces and interactions.

Maps have been used for centuries to coordinate a wide-range of human activities, to help explorers and armies to chart unknown and foreign lands and seas, to visualise and present information, and even to shape our imagination of the past and vision of the future. In our modern digital world, the role of maps has increased many folds, far beyond their assumed conventional roles. Maps in their various forms have increasingly become an underlying platform for countless tools, applications, visualizations, games, and other interactive systems, interfaces, and modes of interaction. Perhaps more importantly however, maps are no longer seen as merely a tool for navigation and wayfinding, but rather as a powerful means for storytelling.

Despite this increasing reliance on maps as an underlying medium for digital interfaces and interactions, there are no well-established venues for supporting interdisciplinary research focusing on maps, which could bring together researchers, designers and practitioners from across different – and currently dispersed – fields of work. In an attempt to address this challenge, we have, over the past few years, been holding workshops [1,2,3,4,5] at various conferences with the aim of fostering more interdisciplinary research on map-based interfaces and interactions.

This focus section in the current issue of IxD&A is in line with this continued effort. The section starts with an introductory stimulated paper by Dix [6], titled "Proper Maps", in which the author attempts to answer – though not "definitely" – the question of "what is a map?". In doing so, Dix first takes a theoretical approach by introducing several lenses through which one can look at what constitutes a map. While the aim is not to formally define what a map is, this attempt leads to considering two key features of maps in terms of their scale and abstraction that can be used to explain and provide a common understanding of the term "map". This theoretical approach is then followed by a practical one, by taking a detailed look at specific forms of digital and non-digital maps. Dix concludes by considering how digital technologies are changing our understanding of maps, and outlines the opportunities and challenges created by these modern map technologies, setting the scene for the remaining contributions in this focus section.

The contribution by Dormann and Wallner [7] focuses on the critical role of maps in video games as an alternative representation of the game world. In particular, they investigate the many roles and functions of maps, beyond navigation, which contribute the players' in-game experiences. The article presents a study of online posts related to this topic. Based on a thematic analysis of these posts, Dormann and Wallner discuss how maps work not only as information systems, but also as ludo-narrative devices through their playful aspects. The aim of the study is to help designers create more innovative games with entertaining cartographic experiences.

The contribution by Naghadeh and Cagiltay [8] also considers the role of maps in games, but focuses more specifically on Location-Based Games (LBGs), which are played in real-world and take into account players' physical locations. This article presents a usability study of an LBG that implements a criteria-based method for populating the map of a university campus and distributing points of interest around it. The study involved interviewing 10 participants who played the game, as well as logging their gameplay. The study showed a positive attitude towards the game by the participants, while also identifying issues related to the inaccuracy of the game map in representing the points of interest, the radius of player interactions, and delays in updating player locations. The article concludes by suggesting that the usability studies of LBGs should go beyond just assessing their user interfaces, and include an evaluation of their location responsiveness, alignment of their virtual game elements with the real-world, as well as how their map interfaces support or hinder exploration of the physical world.

Finally, the contribution by García et al. [9] moves further towards the role of maps for supporting narratives of real-life by investigating the effects of the use of AI-based algorithmic automation on social mappings. The article presents a study that uses a collaborative web-mapping initiative – documenting Observatorio Music Festival in Spain – to investigate the interactions between collective cartography, ethnographic analysis, and AI-driven data processing. The study identifies that biases from training data and algorithmic processes affect AI-generated spatial configurations, which differ from human interpretations. The authors highlight the importance of community participation and data ownership as a way of mitigating AI biases, and advocate for the use of transparent, adaptable AI tools for social mapping.

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