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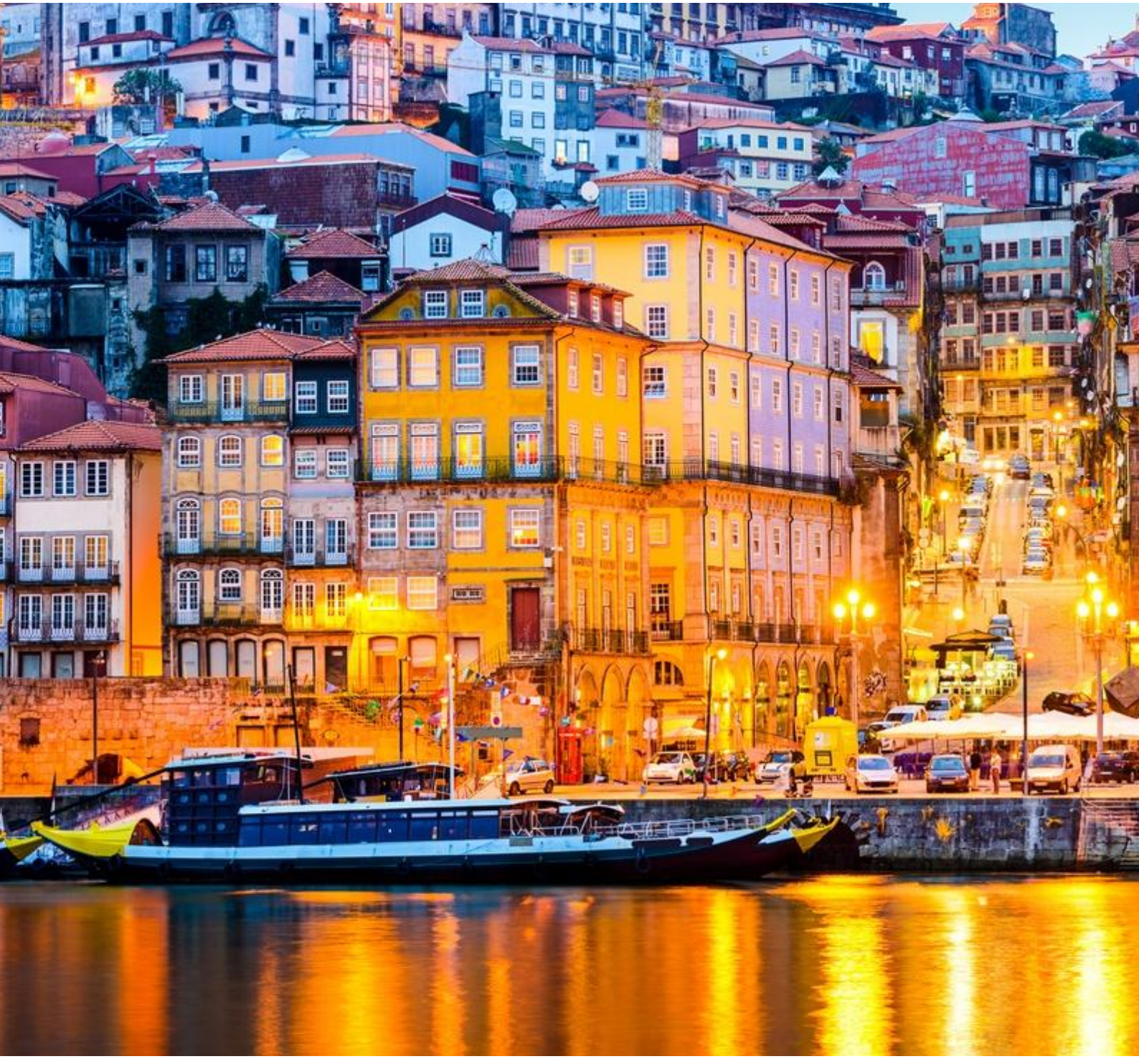

Porto, Portugal

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The Rise of the (Social) Machines

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The advent of the Social Web has led to a profound transformation in the social and cognitive impacts of the World Wide Web. Rather than serving as a mere repository of information and knowledge, the Web has emerged into a multifunctional platform that supports a broad array of social activities and collective problem-solving endeavours. The term 'social machine' was coined by the Web Science community to refer to Web-based systems that feature some form of (often large-scale) social participation. In particular, a social machine is a hybrid socio-technical organization that features the joint involvement of both Web-based (technological) and human (social) elements in the realization of some phenomenon of interest. We are only just beginning to understand the power and potential of such systems. The design of future social machines is likely to yield significant advances in our ability to solve a range of important and pressing problems. Such advances are likely to come from our ability to use social machines as social sensing systems, our ability to control the time-variant structural organization of virtual organizations in a manner that enhances their collective performance profile, and our ability to design social machines that assist with the development of advanced forms of machine intelligence. In addition, inasmuch as we see social machines as part of the physical fabric that realizes a variety of social phenomena, then social machines look to provide a means by which we can influence the nature of the societies in which we live. In the present talk, I will attempt to survey recent research in these areas, and discuss the challenges that confront the attempt to study, understand and engineer social machines.

Dr Paul Smart BA(Hons), DPhil, FBCS

Speaker Bio

Dr Paul Smart is a senior research fellow in the Web and Internet Science research group at the University of Southampton in the UK. His research interests include psychology, cognitive science, knowledge engineering, the Semantic Web, artificial intelligence, human factors, and the philosophy of mind. His current research activities seek to further our understanding of the effect of network-enabled technologies on human cognition at both the individual and collective (group) levels. He is particularly interested in the use of computer simulation techniques to advance our understanding of the factors that affect collective problem-solving performance in the context of complex socio-technical systems. He is also exploring some of the philosophical issues surrounding the cognitive and social impacts of emerging digital technologies. Dr Smart has a DPhil in Experimental Psychology from the University of Sussex. He can be contacted at ps02v@ecs.soton.ac.uk.