

Dr. Gerald Schaefer  
Interactive exploration of image collections

With image collections, both private and commercial, ever growing, efficient and effective tools for managing these repositories are becoming increasingly important. Content-based approaches, which are based on the principle of image feature extraction and similarity calculation based on these features, seem necessary as most images are unannotated. However, typical content-based retrieval systems have shown only limited usefulness.

In my talk, I will present interactive image database browsing systems as an alternative to retrieval approaches. Exploiting content-based concepts, large image collections can be visualised so that visually similar images are located close in the visualisation space. Once an image collection has been displayed, the user is given the possibility of interactively exploring it further through various browsing operations.

After introducing various approaches to visualising and browsing image collections, I will then focus on some of the systems that we have developed in our lab for this purpose. In particular, I will look in detail at the Hue Sphere Browser and Honeycomb Image Browser systems, both of which provide hierarchical browsing approaches which give access to large image collections in an intuitive yet efficient manner.

Bio:

Gerald Schaefer gained his BSc. in Computing from the University of Derby and his PhD in Computer Vision from the University of East Anglia. He worked at the Colour & Imaging Institute, University of Derby (1997-1999), in the School of Information Systems, University of East Anglia (2000-2001), in the School of Computing and Informatics at Nottingham Trent University (2001-2006), and in the School of Engineering and Applied Science at Aston University (2006-2009) before joining the Department of Computer Science at Loughborough University.

His research interests are mainly in the areas of colour image analysis, image retrieval, physics-based vision, medical imaging, and computational intelligence. He has published extensively in these areas with a total publication count exceeding 250. He is a member of the editorial board of more than 10 international journals, reviews for over 60 journals and served on the programme committee of more than 200 conferences. He has been invited as plenary speaker to several conferences, is the organiser of various international workshops and special sessions at conferences, and the editor of several books and special journal issues.