



BU PhD Studentships 2007

Physical and solid modeling for computer graphics

Background to Research

The Computer Animation Research Centre (CARC) is the research arm of the National Centre for Computer Animation, which was rated 5 in the last Research Assessment Exercise.

The CARC's aim is to encourage and foster research and innovation in the fundamental principles and applications of Computer Animation techniques. The Philosophy of the Centre is to encourage the interaction and collaboration between art and science. Our two main research strands are technical research on computer graphics and practice based visual art research.

Although surface modeling has attracted a lot of research attention, most objects are best described by their volume. Solid modelling is an important topic of geometric modelling and computer graphics. In this project we will investigate new techniques which will combine the strengths of geometry- and physics-based approaches. The objects will therefore have both spatial 'awareness' and physical 'properties'. Such modelling techniques have a wide range of applications in computer graphics.

Both Professor Zhang and Professor Pasko have substantial experience in both geometric and physically-based modelling. This research project is to extend their existing work to a new and more exciting territory.

Outstanding Applicants

We are looking for outstanding applicants who will preferably have a first degree no lower than upper-second class in computer science, mathematics or engineering. A Masters degree is desirable. Good programming skills are required. An IELTS (Academic) score of 6.5 minimum is essential for candidates for whom English is not their first language.

The Computer Animation Research Centre is a vibrant research community with a respected international profile. We are looking for candidates who can contribute to this community, help build upon our success *and* benefit from and flourish in this forward thinking generative environment.

Supervisory Team & Research Environment

Jian J Zhang is Professor of Computer Graphics at the National Centre for Computer Animation, Bournemouth University and leads the Computer Animation Research Centre.

His research interests include geometric modelling for animated objects and characters, rigging and skinning, motion synthesis, deformable objects, non-photorealistic rendering, physics-based graphical simulation and applications of graphics to other disciplines, such as medicine.

He has undertaken a number of research projects funded by the AHRC, EPSRC, DTI, GWR, charities, industry and other funding organisations. Prof. Zhang has produced well over 100 peer reviewed publications.

Professor Alexander Pasko gained his doctorate from the Moscow Engineering Physics Institute, Russia in 1988. His career has taken him to the University of Aizu and the Faculty of Computer and Information Sciences of Hosei University in Tokyo, Japan. He has worked extensively on the problems of geometric modelling helping to develop F-rep and Hyper Fun languages.

The work by Professor Jian J Zhang and his colleagues has been well received and has been reported internationally by a number of leading magazines and news organisations, including MIT Technology Review, New Scientist and Live Science (New York).

Informal Enquiries

To discuss your ideas for suitable research topics or to answer any questions you may have please contact Jian Zhang at jzhang@bournemouth.ac.uk

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