

# 125th Anniversary Scholarship

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YEARS

We are pleased to announce that Jesse Rowlands has received the Bangor University 125th Anniversary Research Studentship which consists of a maintenance grant and free tuition. Jesse is studying for

a PhD in Computer Science in the area of Complex modelling with agent oriented techniques in order to develop an agent-oriented bio surveillance system, her case study will be on Malaria.

## Spending the Autumn in Bangor

Rather than the popular British past time of spending the colder months of the year in Spain, we were pleased to host two visiting researchers from the University of Grenada between October and December 2009. Victoria Luzon and Francisco Soler, both computer graphics experts, were awarded a scholarship from the Spanish Government for an overseas visit. With an interest in carrying out a project in medical visualization, they applied to spend their time with the Visualization and Medical Graphics research group at Bangor. For the past three months Victoria and Francisco have been working closely with Serban Pop and Nigel John on creating a new method for real time manipulation



Victoria Luzon and Francisco Soler.

of a guidewire inside an artery of a virtual patient. This is a vital component for one of the medical simulators for interventional radiology that is currently being developed in Bangor. We need to simulate wires made of different

## WiiMote Used for Medical Training

The Visualization and Medical Graphics research group are developing a virtual training programme using the Nintendo WiiMote controller, which could provide inexpensive ultrasound training to doctors in the developing world. Professor Nigel John works with colleagues at the Royal Liverpool Hospital who have developed contacts with the Komfo Anokye Teaching Hospital in Kumasi, Ghana, the fourth largest hospital in Western Africa, which has 1,000 beds and only one radiologist. The hospital has four ultrasound machines which are used by doctors from several

specialties with minimal or no formal training. Lack of experience and training frequently results in diagnostic errors, adverse patient outcomes or expensive equipment remaining unused. An affordable Ultrasound training programme with facilities for remote mentoring could make a huge difference to scenarios such as this and is the motivation for this project.

The Wii Remote has proved to be remarkably adept at providing a low cost "dummy" ultrasound transducer, particularly with the extra accuracy introduced by

## Virtual Reality Headset Will Stimulate all Five Senses

To date, Virtual Reality devices have not been able to stimulate simultaneously all five senses with a high degree of realism.

Research teams at York and Warwick are linking up with experts at the Bangor, Bradford and Brighton Universities to develop the 'Virtual Cocoon' - a new Real Virtuality device that can stimulate all five senses much more realistically than any other current or prospective device.

Bangor's expertise has been sought in the area of haptics technologies. This project has now lead on to a further EPSRC grant, in collaboration with Bradford, to create a photorealistic model of the human brain.

materials and with different bending properties without a high computational overhead. The current software is being developed further with a plan to present the work at a conference later in 2010.



The WiiMote in use.

the Wii MotionPlus sensor. The trainee can set up the position of the virtual patient and then use the Wii Remote to undertake a virtual ultrasound scan. The intention is for the motions made by the trainee to be monitored remotely by an expert mentor, using internet tools such as Skype to allow them to communicate.

# interface@bangor

School of Computer Science

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PRIFYSGOL BANGOR UNIVERSITY

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## Excellent Employability Rating- Graduates in High Demand

*The digital economy is growing at a very fast pace and requires a steady stream of skilled professional graduates to maintain this momentum. North Wales is fast becoming a technology hub and the School of Computer Science at Bangor is growing with it, every year our student numbers increase with most of our students finding graduate employment after their studies with us. We spoke to a past student about his time at Bangor and the work he is doing now:*

Ade Fewlings, is a Senior Visualization Systems Engineer and Systems Manager at CAST Ltd (Centre for Advanced Software Technology). Ade graduated from Bangor with Computer Systems Engineering Degree, and PhD in Distributed Computer Graphics.



Ade Fewlings at CAST

"I look after and provide all server systems to support all aspects of the business, from visualization rendering to large-scale storage. I am also a developer on a couple of visualization application projects, working with other companies from around the UK.

I was fortunate that the area I tackled in my PhD linked directly through to development work at CAST during the early stages of operation here. My PhD did not start in such an area, and it was only through the fortunate arrival of Prof. Nigel John, coupled with the need to find a new supervisor, that led me into this area. The courses I took at undergraduate level, followed by the PhD experience, have helped to give me a 'total systems perspective' on modern computing and this fits in very well with my responsibilities here at CAST.

During the last 6 months of my studies I worked part-time for the University in the IT Services Department, and I was fortunate to then be able to move to this position full-time. The opportunity of a position as Visualization Systems Engineer at CAST came up. Subsequently, I have also taken on the role of Systems Manager (which allows me to continue to use some of the skills I gained in IT Services) for CAST and now spend a large proportion of my time working alongside other Bangor Graduates and others in the growing software development group."

## News item

### UCAS open days

The School is hosting a number of UCAS Days this year on the following dates:

- Thursday 28th January
- Thursday 11th February
- Thursday 18th February
- Wednesday 10th March
- Wednesday 21st April

For further information please contact us on [cs-news@bangor.ac.uk](mailto:cs-news@bangor.ac.uk) or see our web site [www.bangor.ac.uk/cs](http://www.bangor.ac.uk/cs)

## Undergraduate Scholarship Winners 2009/10 Academic Year

Many congratulations to first year students receiving scholarships this year:

Lee Datchow  
Duncan Evans  
Robert Jarman

Sophie Sibley  
Kerry Williams

## Students Present Final Year Projects to Prospective Employers

Every year students at the school are asked to produce posters which outline their final year projects. The projects covered a wide range of different areas and were judged

by industry partners and academic staff. The winning poster was produced by Thomas Christy who was awarded £150.



Thomas Christy.

## Eurographics Awards

A research project has been awarded second place in the Eurographics 2009 Medical Prize competition. The ImaGINE-S: Imaging Guided Interventional Needle Simulation was praised for its innovative use of computer graphics in a complex system that is already far advanced towards clinical use.

Bangor University is not only at the forefront of this technology

it is the lead Institution in the Welsh Research Institute of Visual Computing (RIVIC) which has recently received £5m in funding for research in this area. The Eurographics Executive Committee also elected Prof. Nigel John as a fellow of the Eurographics Association, many congratulations to Prof. John on this very significant achievement.

## Grant Success

Dr Ik Soo Lim has been successful in ESRC & EPSRC grant capture of £480,458.

The grant will support activities involving collaborations between

the School of Psychology and Computer Science at Bangor which will conduct an investigation into fixational eye movement patterns during three-dimensional object recognition.

## World Class Postgraduate Education

The quality of postgraduate education in the School of Computer Science has proven to be world class, the level of achievement that our students are now achieving is not only testament to their hard work but the hard work of all the staff at the School.

David Hughes, a PhD student, has recently published an article in IEEE Transactions on Visualization and Computer Graphics. The journal is

one of the top-10-ranked computer science-software engineering titles according to the Journal Citation Reports by Thomson-ISI. In the article entitled, "Kd-Jump: a Path-Preserving Stackless Traversal for Faster Isosurface Raytracing on GPUs", Hughes has introduced novel methods of ray tracing outperforming existing methods in visualising volumetric data. The originality of this work has been highly regarded.

## Honorary Professor Appointed



Dr Gould (left) with Professor Nigel John.

Dr Derek Gould, an interventional radiologist at the Royal Liverpool Hospital and close collaborator with the School, has been made an Honorary Professor of Bangor University. Dr Gould has been collaborating on medical research projects with the

School of Computer Science for a number of years. Dr Gould has also helped the School with Open Days, providing visitors with an insight into the research that he and Prof. Nigel John have been working on.

## Maths Master Classes



Dr Curzon (centre).

Maths master classes were again well attended. Dr Paul Curzon came to give some enlightening lectures to the group. He then returned with his team later on in the year to give a Google-sponsored lecture to Schools. His lecture and hands on activities on "The Magic of Computer Science" were enjoyed by all who attended.

## Annual Lecture and Dinner

The annual lecture was given by Professor Terry Hewitt. Prof. Hewitt works for EDS as a Computational Engineering Strategist. His role is to develop computational engineering services (including HPC, visualization and grid computing) for EDS, particularly on the Rolls-Royce account.

Prof. Hewitt is an Honorary Professor in the School of Computer Science as well as an honorary lecturer in the School of Computer Science at the University of Manchester where he lectures on the Advanced Computer Science and Computational Science MSc courses.

He is a Fellow of the Institute of Mathematics and its Applications, Chartered Mathematician, Chartered Scientist, Fellow of the British Computer Society, Chartered

IT professional and Fellow of the European Association of Computer Graphics.



Professor Hewitt (right) with Dr Sa'ad Mansoor, Head of School.

The annual lecture and dinner were a popular event this year with over 70 guests attending.

Prof. Hewitt's lecture covered the evolution of Simulation, Modelling and High Performance Computing (supercomputing), over the last 30 years; and the challenges that this area will face in the 21st century.

## Cisco-Certified Instructor Visits School to Present ICT Training Programmes

Mrs Snezhy Neshkova is a Cisco Certified Academy Instructor and the Legal Main Contact for the Cisco Networking Regional Academy and Training Center at the University of Ontario Institute of Technology's (UOIT). Snezhy held a session with Staff at the School to discuss her experiences with Cisco Networking Academy, and how this can be integrated into undergraduate degree programmes in computing and engineering.



Snezhy Neshkova.

## New Member of Staff



Dr Rafal Mantiuk

Dr Rafal Mantiuk recently joined the School. Rafal will be lecturing as well as conducting research into modelling certain aspects of the human visual system in order to apply these models to computer graphics applications.