Welcome to the Winter edition of the Computing and Communication Technologies departmental newsletter. I work at the Science and Technology Facilities Council (STFC) near Didcot, Oxfordshire and I am a member of the Department’s Industry Advisory Board. I have been working with Oxford Brookes University for 14 years and have always been impressed by the dedication of the staff and the enthusiasm of the students. This newsletter shows the range of activities which students and staff have taken part in over the last few months.

I’d particularly like to congratulate CCT on the result of the Research Excellence Framework. CCT is a research centre with a rising international standing and is in the top third of UK universities for its outstanding work. Brookes always has a strong emphasis on innovation with industry to bring its world leading research into practice, and offers invaluable expertise to UK businesses to encourage growth. A recent example is the new Knowledge Transfer Partnership project CCT started with UKP Worldwide. This will develop a state-of-the-art, integrated and extensible e-business system. Companies will then be able to use a web and cloud computing environment to operate more efficiently.

I am always interested to find out what CCT graduates get up to after leaving the university. In this edition we hear from students who are forging careers in the media industry, working for leading players such as the BBC, or working internationally in Chicago and China. CCT maximises the opportunities for its students by keeping its courses close to what industry needs. The new MSc in IT Systems Management provides vital skills for business – these people keep the whole show running! The course includes an option for students to do a year-long placement so they gain experience with real industrial problems as well as learning about the latest technology.

Graduates in Computing and IT are amongst the most sought after by businesses. However, it is still hard to persuade school students to study these subjects at university. CCT engages with schools to inspire the IT experts of the future. Recently CCT robots made appearances at Careers Fest 2015, and also at “Why Science? Why Maths?” held at the Cheney school in Oxford, to show pupils what can be done with computing today. Also, in November CCT worked with all ages at the Emerging Tech Weekender to pitch novel business ideas. I am intrigued to find out how Team Brush! get on!

At STFC, we are working with Oxford Brookes and with Abingdon and Witney College to set up an apprenticeship scheme in IT, aimed at school leavers. This scheme will include enrolment on the Foundation Degree in Computing offered by CCT. This course offers an excellent way to educate the next generation of skilled engineers with the right balance of academic and practical skills.

Finally, it’s great to see Nigel Crook and his robotic friends popping up on TV, with appearances on local and national stations. His infectious enthusiasm will inspire people to find out more about IT – and the great work going on at Brookes!
TECH STUDENTS IN THE MUSIC COMMUNITY

Students on the BSc in Sound Technology and Digital Music have been working as technicians for a number of live music events around Oxford in Semester 1. Concert series ‘Jazz and St Giles’ and the Oxfolk Ceilidh series at Kennington Village Hall have both benefited from students’ skills in mixing live music which are developed quickly in this real world collaboration, working with professional musical artists who have come to appreciate the high standard.

LINUX CLUB

Jordan Bruce, a final year computing student, has set up a ‘Linux club’ which meets every Wednesday from 12-1 in C104. The purpose of the club is to learn more about Linux and to build a Brookes-oriented Linux distribution. Faye Mitchell is setting up a virtual machine for them to use and the group of nine students are currently working their way through the Linux from Scratch manual.

DROIDCON VOLUNTEERS

This year, computing students were given the opportunity to attend Droidcon, the two day annual Android convention in London on 30-31 October, for free, in return for help in volunteering to set up the event. Two students (Alicia Sykes and Iwo Harlęczyk) took up this opportunity and one of them also stayed on for a further two days to attend the Droidcon hackathon. The feedback was excellent: the conference offered interesting talks from Europe’s leading Android developers as well as the opportunity to test out some of the latest Android-based devices provided by the sponsors. There was also an informative presentation from the Android wear product lead from Google about what is new in Lollipop and how to develop for wear devices. The subsequent hackathon was also very productive. Every developer who planned to make something for Android Wear was given a free smart watch to develop on, and some very original apps were created during the weekend.

WEARABLE TECHNOLOGY AWARD

The bi-annual ITMB Student/Employer Event was held in Manchester on 26 November. The event was attended by staff and students from CCT. In the Second/Final Year Competition, sponsored by GE, Nationwide & TCS, students were asked to design a Wearable Technology for an industry of their choice together with a business plan. We are pleased to announce that CCT student, Yanis Vaks, did really well and won one of the two outstanding individual prizes that were awarded.
I am currently a Linux and Windows system administrator for a range of platforms for both physical and virtual environments. This includes web servers, networking and databases. The work involves installing, configuring and maintaining production infrastructure. The infrastructure must be maintained in a manner that supports delivery of services to multiple platforms with the required resilience and performance. I am responsible for monitoring and analysing data, identifying trends and producing solutions to issues that are degrading systems performance and availability.

The objective is to ensure continuity for the facilities supported by the Future Media Operations department by providing capacity planning, monitoring, and maintenance of services and by implementing and maintaining appropriate contingency procedures across the production platforms.

The skills that I developed during my programme at Oxford Brookes were very relevant to the role at the BBC. My technical knowledge of computer systems and also my passion for the more creative multimedia side of things are in line with what the BBC wanted for innovative broadcasting. The programme gave me a sound knowledge of computer networking and my final year dissertation taught me how to manage my own project. I like the job because it allows me to ‘play’ with, and implement, cutting edge technology on a daily basis and I am working at the hub of British broadcasting and mixing with people from all aspects of the business. I plan to stay in the field of networking infrastructure and develop my virtual and cloud based skillset. Longer term I would like to be a systems architect.

My advice to current students at Brookes is to work hard and to use the final year project to learn how to research and develop independently. When applying for jobs have the confidence to aim high. My role, for example, required two years’ IT experience, which I didn’t have, but they still thought I was suitable.

The social life at Brookes was great. I had the time of my life as a fresher in Harcourt Hill and in the following years I had fun living with friends in the Cowley area.

I can recommend the department as it has good facilities and the staff are very approachable.
KATE FREEMAN

Katy Freeman graduated with a First Class Honours degree in Multimedia Production in June 2014. After graduating she joined the BBC at Media City in Salford.

My current role is to log raw footage filmed by the production crew. I watch the entire recorded content and make meticulous notes in a logging software program containing info such as date, time, subject, conversation topics, cast or persons in the shot, location etc which will help the editor or other post-production crew to quickly locate a particular shot. What I like about the job is that I am able to talk to the production crew and gain an understanding of the overall broadcast process from pre-production to post-production. In the future I would like to go into post-production and become a series editor.

I found that university helped me to determine the direction that I wanted to take for my career. I developed many transferable skills which would have been difficult to acquire elsewhere. Living away from home made me more independent and I made many new friends that will hopefully stay with me for life. I was also able to meet people from many different countries and gain an understanding of different cultures and ways of living.

I chose Oxford Brookes because its courses allowed me to explore a number of subjects in media and the university provided good facilities and equipment. The social events were also a highlight, but it wouldn’t have been the same experience without my friends and classmates.
I am currently working for Optimus, a post-production house, based in Chicago as a Colour Intern. The role is to assist the Senior Colourist with regards to conforming and prepping colour grading sessions, and rendering/exporting after the session is complete. In addition, I do some quality control with regards to tracking and mattes etc ensuring a seamless output. I like my job because I learn something new every day, and have the privilege of working with like-minded people. I understand that most post-production houses have a family feel with a good sense of trust. In the future, I would love to become a Senior Colourist at a post-house at some point. In the distant future I hope to progress to become a post-production supervisor.

The Brookes degree certainly helped me to get the job. The MSc allowed me to study a variety of post-production techniques. Also, this particular course allowed me to choose a dissertation topic that I was really interested in. My project was a study on using consumer DSLR equipment and colour grading techniques to create a cinematic experience. I worked closely with another student who was focusing on 3D modelling and animation and the final project was a hybrid between our two dissertation titles. There were many occasions when we had to figure out a post-production workflow to transfer files and data as efficiently as possible. This is very close to how I work today at a post-production house. We constantly transfer files between editorial and visual effects as efficiently as possible. My advice to current students is to select a dissertation that relates to the job you want and start it as early as possible.

Achieving an MSc gives you an edge when companies are analysing a pool of candidates, especially if the degree relates to the job.
How did I get the job in Chicago? Well, after completing my dissertation in 2011, I was looking to see if there were job vacancies in any of the post-houses back at home in Hong Kong. After talking to some friends in the industry I found out that there were many who went freelance instead. After a while I ended up meeting someone who knew a studio owner in China. He set me up for a meeting with the studio head and ended up offering me an internship in China for a couple of months. At the time of the internship, Roger Corman was producing his first film at this particular studio (Palace Of The Damned). I ended up working with the script supervisor throughout production. During production, I started getting to know the director and chatted about my background and dissertation topic at Brookes. As the studio was still relatively new at that time, there wasn’t a specific colour grading suite. After plenty of discussion with the studio head and director, I offered to colour grade the project if I were to invest in the necessary hardware to build a DaVinci Resolve setup with three screens, a Mac Pro with the necessary cards, storage and a colour grading panel. As this was a low budget film, they offered for me to colour grade the film.

During my time in Guangzhou, China, I met some of the cast who were based in Hong Kong. One of them asked me to get in contact with him as soon as I got back to Hong Kong for some potential colour grading projects. When I returned to Hong Kong, I registered my freelance business and that’s how I got started. I met my fiancée after a couple of years of freelance work in Hong Kong, and ended up going back with her to Chicago and started working at the post-production house where I now work.

My best memory of my time at Brookes is meeting people from various backgrounds, most of whom I am still in contact with today. As I was an international student, meeting others from different backgrounds, was very important to me and I was able to learn from them both academically and socially. I had a very active social life at Brookes. I played squash for Brookes and it is mind boggling how many awesome pubs there are around Oxford. The best ones are those of which are difficult to find. There have been many times we would go to a pub with a group and study! I would recommend Oxford Brookes University because I felt that the atmosphere was relaxed and the lecturers were always friendly and helpful. Oxford is a lovely place with beautiful architecture and a great place to study.
PLACEMENTS

CAREERS FEST 2015

Oxford Brookes University joined Activate Learning colleges, City of Oxford College and Banbury and Bicester College in a two-day event called Careers Fest 2015 which took place at The MINI Plant, Oxford on Tuesday 20 and Wednesday 21 January. It offered school pupils from across Oxfordshire access to careers advice and the opportunity to sample a range of future careers.

This year the theme was ‘real jobs now and in the future’ and aimed to provide school pupils with advice and inspiration to help them make decisions about their futures. More than 50 exhibitors took part in the event to showcase a host of exciting employment opportunities in Oxfordshire together with information on the types and levels of qualifications required. More than 2,000 pupils attended the event.

CCT had a stand with robots Artie and Robbie which was supported by Andy King, Luis Fuente, Bedour Alshaigy, Cigdem Sengul, Olivia Cox and Nigel Crook. Our staff and robots worked very hard to engage the pupils (talking to just over 1,000 students and teachers during the two days) and their efforts were rewarded with the prize for 2nd best Exhibitor.
DEPARTMENTAL NEWS AND EVENTS

CHARITY BAKE CAKE SALE
On 29 October, Arantza Aldea’s daughter Sandra, Zaineb Ben Fredj’s daughter Hanna, Rachel Harrison’s son Philip and Samia Kamal’s daughter Amaal held a Charity Cake Sale to save the orangutans (www.chesterzoo.org/support-us/go-orange-for-orangutans).

They also arranged a silent auction for a cuddly orangutan and a large cake!

KNIT ONE, KNIT 278!
Staff members (and friends) of the Faculty of Technology, Design and Environment have been busy knitting and crocheting tiny hats for Innocent Smoothie bottles, as part of the Innocent Big Knit (www.thebigknit.co.uk) in support of Age UK.

On 3 December we got together for a ‘hat hand-in party’ where we pooled our efforts and found we had knitted or crocheted our way to a grand total of 278 hats! As you can see, the range of colours and styles is amazing, and we had so much fun making the hats. Who knew we were such a creative lot?

Innocent Smoothies sold in the Colonnade shop at JHBB during February will be festooned with little hats (but not necessarily our little hats, unfortunately). For every be-hatted bottle sold, Innocent will make a donation to Age UK.

AES SEMINAR ON GAME AUDIO
BSc in Sound Technology and Digital Music Alumnus and current Digital Marketing team member Danny Spiteri and Senior Lecturer in Media Technology David Carugo attended the Audio Engineering Society seminar on Game Audio at Birmingham City University on 3 November 2014 to follow current methodologies in game sound production. Following meetings with the music technology staff at BCU who are involved with the AES, there are plans to expand meetings in the Midlands area to include some held in Oxford with the co-operation of Brookes.
Samia Kamal worked with Tony Hart from the Oxfordshire Local Enterprise Partnership (LEP) to host the Emerging Tech Weekender event which was held from Friday 14 – Sunday 16 November in the Oxford Brookes John Henry Brookes Building. More than 30 participants worked together in teams to present, develop and pitch new business ventures centred on novel technological developments.

Following an initial brainstorm session, five ideas were selected and teams were formed to develop the ideas:

**Team Brush!** – Make sure children are brushing their teeth with a toothbrush that sends messages on how often and how long. Built-in incentives include levels, rewards, social media sharing and messaging.

**SenceSpace** – Live action real time gaming for events, schools and team building

**Crowd Lighter** – Audience participation gaming platform for live events, enabling brands to run competitions, engage crowds with synchronised audio and visual through their mobiles.

**Q Control** – Reduce queues with dynamic pricing: an application which addresses lengthy queues, for example across different outlets such as coffee shops, by changing prices in response to demand

**FindMe** – Help to find missing persons using facial recognition.

Over the weekend the five teams of technology innovators turned their ideas into ventures with real world potential for commercial or social enterprise ventures, all in just three days. Teams were helped by tech experts and business gurus, then pitched their ideas to a panel of judges.

The teams had support from technology mentors: Ben Foxall who provided code and mentoring for teams working with real-time browser connections; Ben Ward with advice on internet of things; and Tom Nickson who gave encouragement for teams working with mesh networking.

Business mentors Placi Espejo (pictured above), Jonathan Gittos, Mark Evans, Tony Hart and Dave Fletcher ran workshops and gave advice on pitching, developing business plans, and preparing ideas for commercialisation.

Judges were Nigel Crook, Head of Computing and Communication Technologies at Oxford Brookes University, Julian Jantke, a co-founder of technology startups, and Tony Hart, Network Navigator for Digital, Media, & Publishing for Oxfordshire LEP.

The Team Brush! venture won the award for Best Commercial Potential and Audience Selection

Team Brush! is the brainchild of 13 year old Joana Baptista; her team, aged between 11 and 20, contained the only children competing at the event. Team Brush! are Oxford High School student Joana Baptista, aged 13, Cherwell School (Oxford) student Tyriah Allison, aged 11, and Oxford Brookes University students Seren Davies, 19 and Andrew Hayzen, 20.
For me, this weekend was a great example of how bringing people together with different skills and backgrounds can help an idea flourish into the beginnings of a product. We are very excited about how SenceSpace has the potential to draw more people outdoors and revolutionise outdoor play. I’m especially enthusiastic about the potential for enhancing my own children’s life and health with SenceSpace games.

Monika Roozen of SenceSpace

This has been one of the most exciting events for tech startups I have seen. We began on Friday night with a bunch of simply great ideas and have watched them develop into viable business pitches, all in just three days.

Dave Fletcher, co-organiser of Emerging Tech Weekender

SUCCESSFUL VALIDATION

The proposed new programme entitled MSc IT Systems Administration and Management was successfully validated on the 19 November. The programme team, led by Dr Faye Mitchell, had very positive discussions with the panel, which included Dr Nicky Moss from Computing and Communications at the Open University, who commended the new programme as ‘groundbreaking’. The team were also commended for their consultation with industry, which was extensive.
INTERNATIONAL COLLABORATION ON BEE DATA

In October 2014, David Carugo travelled to Ireland and collaborated with artist Sean Taylor and scientist Mikael Fernstrom on the production of a multi-media art/science communication piece about the decline of bee populations. Data from bee colony collapses was analysed and a process called 'sonification of data' was used as the basis for a piece of music which was performed and recorded. The resulting recording is being distributed on physical media and via digital delivery, and is designed to raise awareness of the problem of bee colony collapse.

Nigel Crook gave an evening lecture to the Oxfordshire Branch of the BCS on Thursday 9 October entitled 'Artie the Robothespian'. The lecture explained how Artie is designed to interact with people to entertain them and get them working with technology. Nigel also demonstrated the Nao robots and the Baxter robot as shown in the photographs. The lecture was well attended including many younger guests.
Communicating Computer Science – BEJLT Special Issue

Nigel Crook, David Duce and Clare Martin are guest editors of a special issue of the Brookes eJournal on Learning and Teaching which will be published early in 2015. This special issue is concerned with learning and teaching innovations for communicating computer science. The call included case studies and effective techniques that have been used within undergraduate and postgraduate computing courses, as well as more wide-reaching initiatives such as MOOCS and widening participation activities, or support actions associated with the Computing at School movement. Topics of interest include:

- Teaching experiences within degree courses that are distinctive for example in mode of delivery, level of student engagement or topic.
- Experiences of Communicating Computing modules such as those connected with the Undergraduate Ambassadors Scheme.
- Experiences of teaching students to teach Computer Science at any level.
- Problems and solutions.
- Assessment methods and associated issues.
- The role of mentors.
- CPD for teachers.
- Teaching/learning technologies/methodologies.
- Case studies.
- Resources and tools.

Congratulations to Michael Sapienza who successfully defended his thesis entitled “Recognising and localising human actions” on 11 December 2014. Human action recognition in challenging video data is becoming an increasingly important research area. Given the growing number of cameras and robots pointing their lenses at humans, the need for automatic recognition of human actions is on the increase, promising Google-style video search and automatic video summarisation/description. Furthermore, for any autonomous robotic system to interact with humans, it must first be able to understand and quickly react to human actions. Michael’s thesis has made significant contributions to this important area of research. His External Examiner was Professor Andrew Zisserman from the University of Oxford and his Internal Examiner was Dr Tjeerd olde Scheper. His supervisors were Professor Phil Torr and Dr Fabio Cuzzolin.

Dr Muhammad Younas and Dr Arantza Aldea have been awarded a Knowledge Transfer Partnership (KTP) project funded by the Innovate UK (formerly the Technology Strategy Board). The project is on innovative e-business development for a period of 30 months. The project is in collaboration with the UKP Worldwide company which provides global mailing management and distribution services. The project aims to develop a state-of-the-art, international e-business system in a web and cloud computing environment, which is capable of providing a flexible, integrated and extensible platform for business growth.
**STAFF NEWS**

**RACHEL HARRISON**

Rachel Harrison will be the Program Chair for the 4th RAISE Workshop, co-located with IEEE International Conference on Software Engineering, Florence, Italy, May 2015. She is also a Program Committee member for the 41st Euromicro Conference on Software Engineering and Advanced Applications (SEAA 2015), Funchal, Madeira, Portugal, 26-28 August 2015.

Rachel Harrison also attended a two-day workshop at UCL on App Store Analysis and presented a talk entitled “Reviews from the Google Play Store”, describing how we automatically analysed over 3,000 app reviews, and how we hope to automate the design of apps by using information from such reviews. There were 35 attendees from around the world. The discussions ranged from “Is this software engineering” through to “Where Does My Sensitive Data Go?”.

**DR CHENGZHI XU**

Dr Chengzhi Xu from Hubei University of Technology, Wuhan, China, has arrived at the department as an academic visitor. He will work with Professor Hong Zhu and the Applied Formal Methods Research Group for a year on an agent-oriented programming language project.

**HONG ZHU**

Hong Zhu is invited to be the Program Chair of the 22nd IEEE Conference on Web Services (ICWS 2015), which will be held on 27 June - 2 July 2015 in Anchorage, Alaska, USA.

Hong Zhu is the founder and chair of the steering committee of the series of workshops, which has been run successfully in the past years since 2006.

**PROFESSOR XINJUN MAO**

Professor Xinjun Mao finished his visit to the Applied Formal Methods research group on 30 September 2014. He spent three months at the department, working with Hong Zhu, Ian Bayley, Peter Marshal and David Lightfoot on agent-oriented programming. His visit has been fruitful. During the visit, he wrote a survey paper on agent-oriented programming from a software engineering perspective, which is to be submitted to a journal.
It has been a busy start to the year for Artie. In addition to being at CareersFest 2015 for two days, he was also exhibited at the “Why Science? Why Maths?” event which was held at Cheney School on 13 January. He and Robbie also took part in the HE Conference at Oxford Brookes on 14 January. Many thanks to Luis Fuente and Cristian Roman for transporting, setting up the robot and running the exhibition/workshops on these dates.

BBC WORLD TV APPEARANCE

Nigel Crook was invited to appear on BBC World TV’s Global programme hosted by Matthew Amroliwala. He was joined in the interview with an academic from London Metropolitan University who was an expert on computer graphics. The subject of the interview was realistic humanoid robots and animated characters, and featured demos of Artie and our head-and-neck skeletal robot Eddie. The interview was broadcast live on 6 November.

JOE CARR, JIM TEMPLETON AND JON DEMPSEY

spent five days at Pinewood Film Studios where as well as trying to sneak onto the James Bond set and scavenging dustbins for Star Wars souvenirs to sell on ebay, sat and passed the Avid Professional Level Instructors course. This allows the department to run professionally accredited video post-production courses the first of which ran in week 0 in Wheatley with 18 current TDE students and alumni. We can now certify students (or anyone) up to the 200 certification level. As far as we know, only three other places in the UK are certified to offer the 200-level and they’re all in Scotland.

DAVID DUCE

David Duce attended an Exam Board at the University of Swansea on 16 January where he is external examiner for the Foundation Degree in Computer Science.

He also attended the 100th birthday celebration for Professor Dan Eley FRS at the University of Nottingham on 29 October. Dan taught physical chemistry to David whilst he was a student at the University of Nottingham some years ago. Whilst not a work-time activity, there was some relevance to computer science. One of Dan’s research areas was biophysics and in the 1950s Eley and Spivey were the first to suggest that DNA could be an electrical conductor. Around this time Eley also did ground-breaking work on organic semiconductors, a field in which he continued to work long after he retired.

GERALD ROY

Gerald Roy has passed the PRINCE2 Foundation and Practitioner exams. This will enable him to teach project management in IT Systems Administration modules and also to manage IT projects for CCT.

ARTIE

It has been a busy start to the year for Artie. In addition to being at CareersFest 2015 for two days, he was also exhibited at the “Why Science? Why Maths?” event which was held at Cheney School on 13 January. He and Robbie also took part in the HE Conference at Oxford Brookes on 14 January. Many thanks to Luis Fuente and Cristian Roman for transporting, setting up the robot and running the exhibition/workshops on these dates.
ENSURED that your project final report is due for submission in week 11 instead of week 8

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YOU ASKED ... SO WE

ARRANGED for Preparation for Employability sessions to be timetabled on Wednesday afternoons

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CONTACT INFORMATION

DEPARTMENT OF COMPUTING AND COMMUNICATION TECHNOLOGIES
OXFORD BROOKES UNIVERSITY
WHEATLEY CAMPUS
OX33 1HX

For enquires please contact:

cct-enquiry@brookes.ac.uk
Mark Small (Undergraduate) +44 (0) 1865 484595
Amanda Holden (Postgraduate) +44 (0) 1865 485706

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