MIND

Wheels for the

Striking
GOLD

SURROUND
SOUND

Making
everything
beautiful

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**A magazine for academic staff, students and IT professionals**

**SPRING
2007**

PRODUCT ROUND-UP *WHAT'S NEW IN THE WORLD...*

Best of both worlds

VMWare is the gold standard in server virtualisation, and now it has taken on Parallels with its own Windows-on-Mac OS X application. There's support for seamless Windows apps on the desktop, DirectX 8.1, multi-processor virtual machines, 64-bit operating systems, point-in-time snapshots, and migration of Boot Camp installations onto the desktop. Contact VMWare on (02) 9375 2269 or www.vmware.com.
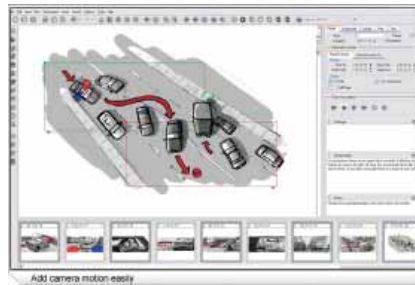
Get your movie on track

Creating content digitally may put a universe of tools at your fingertips, but you still need effective planning and production tools to make your story work as well as possible. ToonBoom Storyboard Pro provides panel or overview window layouts to let you draw sketches, manage camera movement, use onion-skin and motion layers, create vector images and more. Academic pricing is $US599.99 from www.toonboom.com/product/storyboardpro/ or consider the $US149.99 entry-level Studio at www.toonboom.com/products/toonBoomStudio/.


Dfinest thing

Digital image handling has its benefits, but noise – the sharp gradations and unwanted sensor artefacts of pictures taken in low light with high ISO settings – isn't one of them. Compensation filters usually reduce noise but soften or destroy much of your image, but DFine 2 eliminates this compromise by offering professional control over noise reduction for Photoshop users. Costs $US99.95 from www.niksoftware.com/dfine/.


Making smartphones think different

If you want a smartphone but can't wait until the iPhone launches here next year, you'll probably end up with a Windows Mobile (WM) device. Since there's no ActiveSync for Mac, you'll need Mark/Space's The Missing Sync. It synchronises music, photos, SMS, phone history, calendar, to-do and other information with your WM device, providing features even ActiveSync doesn't. The latest version supports WM5 and WM6. Costs $US39.95 from www.markspace.com.
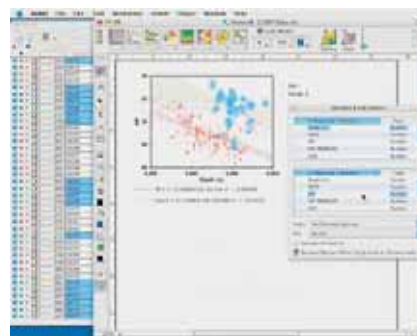
Willing and Aabel

If numbers are your thing, Aabel may be your new best friend. Combining statistical and exploratory data analysis, scientific graphing and thematic mapping, Aabel combines data from multiple sources into more than 200 types of graphical analysis and facilitates exploration of data hierarchies. If you need to analyse it, Aabel can probably do it. Costs $US345 from www.gigawiz.com/aabel.html.
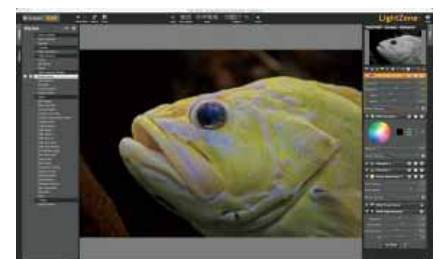
Get that light touch

Although it's possible to do just about anything in Photoshop, sometimes you just want to get the job done quickly and easily. LightCrafts LightZone 3 keeps offers a full suite of image retouching and asset management tools. Want to brighten up someone's face? ZoneMapper lets you click on it, then adjust your sliders. Noise reduction, RAW support, automatic image optimisation and more. Costs $322.52 from www.lightcrafts.com.

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AUC MEMBER UNIVERSITIES AUSTRALIA:

- Australian National University
- Central Queensland University
- Charles Sturt University
- Curtin University of Technology
- Deakin University
- Edith Cowan University
- Flinders University of SA
- Griffith University
- James Cook University
- La Trobe University
- Macquarie University
- Monash University
- Murdoch University
- RMIT University
- Southern Cross University

- Swinburne University of Technology
- University of Adelaide
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- University of South Australia
- University of Southern Queensland
- University of Sydney
- University of Tasmania
- University of Technology, Sydney
- University of Western Australia
- University of Western Sydney
- University of Wollongong

- Victoria University of Technology

NEW ZEALAND
- University of Auckland
- University of Canterbury
- Massey University
- University of Otago
- Victoria University of Wellington
- Waikato University

AFFILIATED UNIVERSITIES
- Australian Defence Force Academy
- University of Canberra
- Dr Mahalingam College
  of Engineering & Technology,
  Pollachi, India

EDITORIAL

Welcome to the Spring 2007 edition of Wheels for the Mind. The biennial academic conference on the Gold Coast is the AUC's flagship event. The conference theme of contribute, communicate and collaborate provides a unique forum for member universities to exchange ideas face to face and continue the inspirational work using Apple technologies in Australian Higher Education.

Attracting keynote speakers like Dr. Kenneth C Green, Author, Educator and founding Director of the Campus Computing Project in the USA, the world's largest study of the role of IT in colleges and universities. Professor Carl Berger, Dean Emeritus of the University of Michigan and amongst many other things, Apple Digital Campus research fellow, promises to stimulate minds as a highly sought after and engaging speaker. Michael Ossipoff, Director of Capability with Telstra whose role is interpreting the implications of new technology for Business to leverage strategic advantage – and to add to this impressive line up, Nick Tate, Director ITS University of Queensland and Director of the Australian Computer Emergency Response Team, brings a raft of diverse industry experience which is sure to enrich an already engaging conference schedule.

If you look at the history of mankind's achievements you will see in many cases that an extraordinary sequence of events led up to their eventual outcome. Being in the right place at the right time and being given the right opportunity seems to sum up this phenomena. A good example of this is how two students and AUC Scholarship winners, Zac Cohan from Macquarie University and Nik Youdale from the University of New South Wales, developed 'Picturesque' to recently win an Apple Design Award for best student project.

Who knows of the extraordinary sequence of events or chance meetings that may come from this conference. One thing the AUC is committed to is facilitating those opportunities and fostering relationships which we hope will progress mankind's achievements in the field of higher education in concrete and deliverable ways for shared benefits between Australian universities.

Stephen Johnston
s.johnston@ecu.edu.au

Rendezvous at the Gold Coast
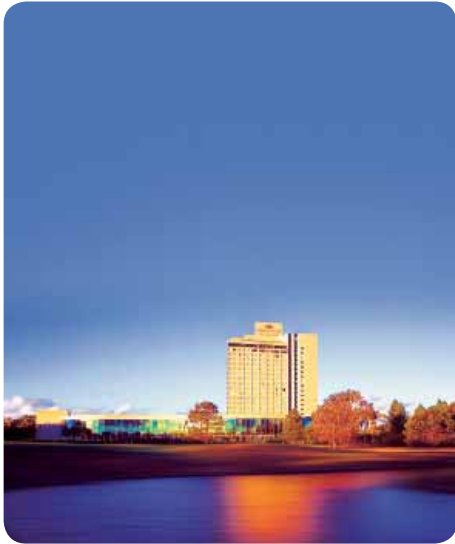
It's that time again: the biennial AUC Conference is on from September 23 to 26 at the Crowne Plaza Royal Pines Resort on Queensland's Gold Coast.

Themed 'Contribute, Communicate, Collaborate', the conference is built around the opportunities presented by pairing the strength of Mac OS X with the connectivity provided in the emerging broadband environment.

Papers and presentations are organised around three streams including:

Academic Adventures

'Academic Adventures' for Academics and Students: How is Mac OS X being used in teaching and learning, or in broader university life?
[sessions in Marquis Room]

Developer Discoveries

'Developer Discoveries' for developers: Share expertise developing software for Mac OS X
[sessions in Prince Room]

Technology Trails

'Technology Trails' for technical staff: What challenges do staff face in managing Mac OS X systems in a university environment?
[sessions in Monarch Room]

For your convenience, a full conference programme is on the next page. The organisers hope you enjoy the conference and, as always, look forward to your participation!

AUC Update

Macworld Scholarships open

The Macworld Conference & Expo is a prime sounding point for major Apple announcements, with Steve Jobs' keynote speeches at the event effectively marking the start of each new year in IT. This year's event saw the launch of the revolutionary iPhone, and all eyes will again be on centre stage to see what Apple comes up with next year.

The 2008 conference will be held from January 14 to 18 at The Moscone Center in San Francisco. The AUC will be offering a number of scholarships to assist staff from member universities to attend.

Each scholarship, valued at $4500 plus an amount to assist recipients from regional and non East coast universities, can be put against airfares, accommodation, Macworld conference registration, and up to 7 days' travel insurance.

Applications for these nationally competitive scholarships close October 5. Visit www.auc.edu.au for more information on how to apply.

CreateWorld is back

After a strong reception in 2006, the CreateWorld conference will return this year, to be held at Griffith University's Southbank Campus in Brisbane. From November 26 to 28, attendees will gather to share their experiences and insights in using digital and online technologies to explore their creativity in new and imaginative ways.

Last year's event was a runaway success, with dozens of delegates converging on Griffith University's Southbank campus in Brisbane for the event. This year's event is going to be bigger and even more chock full of useful content, networking opportunities, and distinguished speakers.

Details will be announced soon.
Check www.auc.edu.au for more information as it becomes available.

Rocking Your X-World

X-World has already become an AUC institution, with strong positive feedback from last year's event leading to an even bigger event at the University of Technology Sydney from 4 to 6 July this year. Each university received six subsidised places to the event, which covered a broad range of technical topics across back-end and front-end academic environments.

The best-received sessions included 'Hands-On with Lithium Network Monitoring', the 'Developing With Leopard' keynote, 'Building Your Own Apps – Why Wait for Apple?', 'Apple Remote Desktop 3', 'SAMQFS & OS X Hybrid SAN Architecture', 'Intel Virtualisation', 'Understanding & Using Package Maker', and 'Advanced Leopard Server'.

Overall feedback for the conference was positive, with words like 'excellent', 'superb' and 'well-prepared' confirming the value of the sessions. Fully 95 percent of attendees rated X-World as time well spent, and an equal proportion said they'd be back next year.

It's too early to talk about definitive plans, but feedback like this is invaluable for helping make X-World an even better event in 2008.

Something interesting happening within your university's teaching environment? We want to hear about it! Drop us a line at s.johnston@ecu.edu.au and we'll include the most interesting tidbits in the next issue.

Time	Sunday 23rd September	Monday 24th September	Tuesday 25th September	Wednesday 26th September
8:00		Arrival Tea & Coffee Royal Benowa Foyer	Arrival Tea & Coffee Royal Benowa Foyer	Arrival Tea & Coffee Royal Benowa Foyer
8:45		Welcome Marquis Room	Housekeeping Marquis Room	Establishing the Australian Access Federation
9:00		Apple Directions Tony King, Apple Australia Marquis Room	TBA Michael Ossipoff, Telstra Marquis Room	Nik Tate, Director, ITS, U of Q Marquis Room
Varies		9:30 Into the Third Decade of the IT 'Revolution' Kenneth Green, Campus Computing Project Marquis Room	10:00 Peripato Telematikos, an exercise in social cartography and Public Authoring Greg Giannis, Victoria Uni Development Platform for Wireless Networked Control Systems Mohammad Tabbara, Melbourne Uni I_TV: broadcasting teaching via the Web David Hood, Otago University, New Zealand	9:45 Using Social Software? I Want That One! Colin Warren, Deakin Uni Getting the iPod to Do More: A Case Study Daniel Saffioti, Uni of Wollongong How Will You Have Your Cocoa This Christmas? A Leopard Perspective & Audio Nomad for Location-based Media Authoring Daniel Woo, UNSW
		Morning Tea (10:30) Royal Benowa Foyer	Morning Tea (10:45) Royal Benowa Foyer	Morning Tea (10:30) Royal Benowa Foyer
11:00		11:00 Making the leap ahead with Leopard Stephen Atherton, Apple Australia Marquis Room	11:15 Caught in the Web: Twitting, Podding, Blogging and Mashing Kate Foy, USQ iNetSim + iClassMate Iain Murray, Curtin Uni Software development of embedded systems on Macintosh Phillip McKerrow, Uni of Wollongong	11:00 The Millennial Student and now the Millennial Instructor: Implications for Teaching, Learning, Support and, Gasp, Reward and Tenure! Carl Berger, Professor and Dean Emeritus, University of Michigan
12:00		Contribute, Communicate, Collaborate: The Internet as Workplace in the Digital Arts Paul Draper, Griffith Size Does Matter – How We're Dealing With Extraordinary Storage Requirements Ian Duncan, U of Q Bonjour-based Collaboration Services in a Remote Collaborative Environment Choon Jin Ng, Sydney Uni	Making News Today: Content Creation In the Classroom Natalie Cooper, Uni of Wollongong Writing a Leopard Quick Look Plugin for Flow Cytometry Standard Files Geoffrey Ericksson, U of Q The Initial Stages of Development of the Carrick Exchange Rob Phillips, Murdoch University	Closing Comments Marquis Room
12:45		Lunch Kalinda Restaurant	Lunch Kalinda Restaurant	BBQ Lunch (12:30) Kalinda Restaurant
1:00	Registration opens Royal Benowa Foyer	Optional Panel Session: The Digital Native, Fact or Fiction? Prince Room		
Varies		2:00 The Evolution of Interactive Learning Material for Medical Students Edward Palmer, Adelaide Uni Using Python and PyObjC for Scripting and Cocoa Development James Bekkema, Charles Sturt Uni Cross-Entropy Optimisation using Xgrid Gareth Evans, U of Q	1:45 MyMurdoch: A Case Study of a Virtual Student Community at Murdoch Uni Lloyd Johnson, Murdoch Uni Quartz Composer Tips and Traps for Developers Luke Toop, Uni of Adelaide Commodity Hardware and Software for High End Professional Video Applications in Tertiary Teaching James Steele, Uni of Canberra	
Varies		2:45 Harnessing the Power Rivka Niesten, ECU PxGrid – A High-throughput Approach to Protein Structure Determination Mark Bate, Monash Uni How to Use the Macintosh to Geocode Media for Google Earth and Google Maps James Steele, Uni of Canberra	2:30 Categorising, Searching and Reflecting with Video Tony Fetherston, ECU Navigable Movies: A Real QuickTime VR Paul Bourke, UWA Developing Real-Time Systems in Java on Macintosh	
		3:00 Afternoon Tea Royal Benowa Foyer	3:15 Afternoon Tea Royal Benowa Foyer	
		4:00 Plenary: Student Developers Marquis Room	3:45 JAMTART: An Online Performance Support System For Project Management Mark McMahon, ECU Developing Apps that are 'Managed Environment' Friendly Adam Reed, ANU Animating Ideas: Communicating Complex Dynamic Content Ric Lowe, Curtin Uni	
		5:00: Close of Day	4:30: Close of Day	
	5:30 Welcome Drinks Royal Benowa Foyer	5:15 Optional Developer Session: Future Mac OS X Developer Directions Prince Room	7:00 Conference Dinner Drinks in Royal Benowa Foyer, then move into Prince Room	

Making everything beautiful

By David Braue

Not many nineteen year-olds can say they're the author of a globally successful application that has sold thousands of copies, won an international software design award and graced the top page of Apple's own downloads section – twice. But that's just the first of what are likely to be many claims to fame for Zac Cohan and Nik Youdale, whose graphic tool Picturesque has gone from strength to strength since its release earlier this year.

Friends from high school who are now in their second year of university – Cohan a philosophy student at Macquarie University, and Youdale an electrical engineering and computer science major at the University of NSW – both are relative novices to programming. Back in Year 11, they began teaching themselves basic programming and produced a few smaller applications "which never really took off," Cohan recalls.

That all changed last year, when the two received AUC scholarships to the Apple Worldwide Developers Conference and began learning the ins and outs of Cocoa. "It's a very inspirational week," says Youdale. "You come back wanting to write software."

And write they did. Through continued self-teaching, some help from an AUC course on Cocoa last year – and a $500 AUC grant for an Apple Developer Connection Select membership – the two soon began developing Picturesque.

Picturesque was originally envisioned as an alternative to Photoshop, which is the gold standard in image editing tools but continues to have a steep learning curve. Instead of being a complete replacement, however, Picturesque was designed as a means of helping people accomplish simple image editing tasks with just a few clicks.

"Everyone's got Photoshop, but we found it really difficult to use for simple things, like making an image look good with rounded corners," Cohan explains. "It's something that people want to do all the time, but it's just a nightmare on Photoshop. So we thought 'wouldn't it be great if there were a piece of software that did those things?' We just started thinking around that concept of taking an image and making it beautiful."

Offering effects like reflections, curved borders, fading and glow, the application's architecture is built completely around Cocoa and Core Graphics, with all image properties fully scriptable using AppleScript. Batch processing is supported and has been rated in some reviews as being faster than using Photoshop.

After four months of intense development, Picturesque was unleashed onto the world in April and quickly gained a worldwide profile. This rapid elevation was not the result of quick marketing, however, as it was the result of good timing and the pair's last-minute rush to complete the application in time to enter it into the Apple Design Awards at WWDC 2007, which the two again attended this year courtesy of an AUC scholarship.

Making the deadline for the awards meant the pair "were working flat out for the week before", Cohan recalls. "But we got it in the day before the deadline, and had our fingers crossed."

It clearly worked: Picturesque was chosen as the winner in the Student Product category of the awards, propelling the team to instant stardom with a front-and-centre profile on Apple's Web site. Within hours, their own site was showing that all-too-common result of instant stardom: it crashed, and crashed hard.

The duo quickly moved their site to another server, and the going has been great ever since. More than 2,000 copies of the $19.50 program had been sold through their Web site (www.acqualia.com/picturesque/) within three months of the product's launch, and continuing strong word of mouth portends a bright future for the application.

"It's hard to get in touch with people when you're as small as we are," says Cohan. "The people that

find software through sites like MacUpdate.com and VersionTracker.com are usually very picky people – designers and Web developers looking for software that can help us. But we don't have any competition, because there is no other software except Photoshop that does what we do. It's ridiculous that nobody had done this earlier."

Never content to rest on their laurels, the duo have been busy juggling their uni schedule with updates to Picturesque, and are already working on "something larger and bigger" – although they decline to provide any more details at this point.

In the long term, both Cohan and Youdale hope to continue building on the popularity of Picturesque and make commercial development an ongoing endeavour. "We'll be working on it any time we're not at uni," says Cohan. "Other kids have to devote their time to fast food shops or retail as jobs, but working on commercial products will keep us going."

So, too, will the exposure Acqualia has gained since its WWDC coup. The pair are also thankful to the ongoing support of the AUC: "How lucky are we to be born in the only country where an organisation actually exists to give students the ability to go to WWDC," says Cohan. "We've been pretty lucky, because we ended up in the right place at the right time doing the right thing. And this is just the beginning."

STOP-MOTION TEACHING

With its mountainous terrain, remote areas and massive cleft separating North and South Islands, New Zealand presents some unconventional challenges when it comes to delivering teaching to remote staff.

At the University of Otago, which has more than 17,000 students and 3,250 staff spread across five main campuses and several outlying facilities on both islands, this issue was felt acutely. Information Technology Services trainers had real problems when it came to delivering consistent technology training on both mainstream productivity applications and niche applications that meet a specific requirement for a particular university department.

While organisations have a number of online options for delivering application training, many of these become problematic when bandwidth is unpredictable, which was a problem trainers faced given the limited bandwidth to some of the sites involved. To resolve this problem, IT trainer David Hood took a fresh look at the challenge the organisation faced and came up with his own solution.

"Most Internet video tends to sacrifice the clarity of the image for frequent refresh rates so that you get a continuous view," says Hood. "We decided that for our purposes, being able to see the screen clearly was more important than seeing the mouse moving continuously."

With this in mind, Hood set about developing a training method that would allow attendees of a class to see what was happening on his computer, without requiring the higher bandwidth of a dedicated streaming desktop solution.

The result, developed over the course of a couple of days, uses scripts to automatically take a snapshot of the host desktop every second. Each snapshot is written to a directory as a PNG file using a single filename, then served out to connected parties using the Apache Web server built into the Mac OS X desktop.

To participate in the online training, attendees only have to go to a specified URL, which contains a small amount of JavaScript code that forces the desktop client to update the page, which forces it to download the updated screen shot, once a second.

The result is a continuous stream of desktop images that allows remote students to follow along with lessons as they're given. Whatever Hood types, draws or runs on his computer is instantly conveyed to trainees in real time, allowing him to walk them through application training at a suitable pace.

While it doesn't support video, Hood says his solution has proved more than adequate for easily delivering training to students on a broad range of topics. Because it's delivered using standard Web browser technologies, the solution doesn't require access control mechanisms as would be necessary with Apple Remote Desktop or other formal online training systems.

"When you're talking about training, you start facing the issue that the people you're teaching aren't necessarily that skilled in computer things, so you need to make it as easy as possible," he explains. "It's quite handy for ad hoc phone things, where someone who has been to a training course rings up and says, 'I didn't quite get this point now that I'm back in my own office'."

To enhance the experience, Hood has written several enhancements that provide a measure of interactivity. A PHP Text Chat clipon, for example, shifts the display of the desktop images into a frame-based Web page and allows trainees to submit questions or comments in real time.

Another feature of Hood's solution is the ability to send an accompanying sound stream using embedded QuickTime, providing background music or voice narrations for the onscreen information. Hood's training team has also used the technique to put together training videos – with a series of screen shots cobbled together into QuickTime movies – and is now fielding enquiries from other departments that are interested in the solution.

"We decided that for our purposes, being able to see the screen clearly was more important than seeing the mouse moving continuously."

"If you don't know what the computer is at the other end, and you're not entirely sure of the bandwidth and who is there, it fills that niche very well," he says. "You can get the same kind of result on a Windows computer, but it's just that everything isn't sitting there to be put together like it is on the Mac."

Better than being there.

Apple's QuickTime Virtual Reality (QTVR) technology has been helping people create immersive graphical environments for more than ten years, but the types of environments it produces are limited to still images with limited interactivity.

Aiming to improve this, Paul Bourke, a senior research fellow within the Western Australia Supercomputer Program at the University of Western Australia (UWA), has taken QTVR into a new dimension by developing a technique for allowing immersive environments to be made using movies rather than static pictures.

The project grew out of Bourke's work at the University of NSW's iCinema Centre for Interactive Cinema Research, which was involved in a project that composited moving actors on top of static QTVR images of a range of Indian temples. Bourke wondered whether he couldn't take that idea a step further by making the entire environment, rather than just a few characters within it, move.

The result was Bourke's Navigable Movie Player (NMP), a Cocoa application that uses the QuickTime API to render video and audio streams recorded using a special format. This format,

which is produced by 360-degree cameras such as the $10,000 six-sensor Ladybug2 spherical digital video camera from Point Grey Research, records movies as a series of doughnut-shaped 360-degree images.

Using the NMP application, those images are decoded into a continuous series of QTVR images, allowing users to move around and interact with the video as it unfolds. For example, Bourke refers to footage he has produced of a rock concert in progress: one viewer might turn and watch the drummer playing, while another could focus on the lead singer using the same video stream.

"The problem with a movie is that you're constraining viewers to just look in the direction that you create the movie at," he explains. "What I can do with these navigable movies is to create something in between the extremes of fully interactive go-where-you-want, with pre-rendered environments. The key here is that every time you watch these movies, you get a different experience."

NMP is about more than just cool video effects: by generating immersive movies of data that can be explored and zoomed in on while they're

playing, scientific researchers can use the tool to get completely new understandings of the data their research produces.

Bourke, who demonstrated the technology at this year's AUC Conference on the Gold Coast, has also imbued NMP with the ability to add different projection effects – such as fisheye distortion – to the movies as they're rendered.

This step allows the movies to be projected on large hemispherical domes such as those found in specialised planetariums, which have fisheye projection capabilities to display the distorted NMP videos as full 360-degree projections. This capability, Bourke believes, will breathe new life into the relatively mundane video content currently available for such facilities.

"Increasingly, planetariums are becoming full digital video planetariums," he explains. "This means they can put real-time movie style content on the entire dome, and let the presenter present movie content that has some sense of navigation. This is a very powerful thing that lets planetariums think outside of just astronomy content."
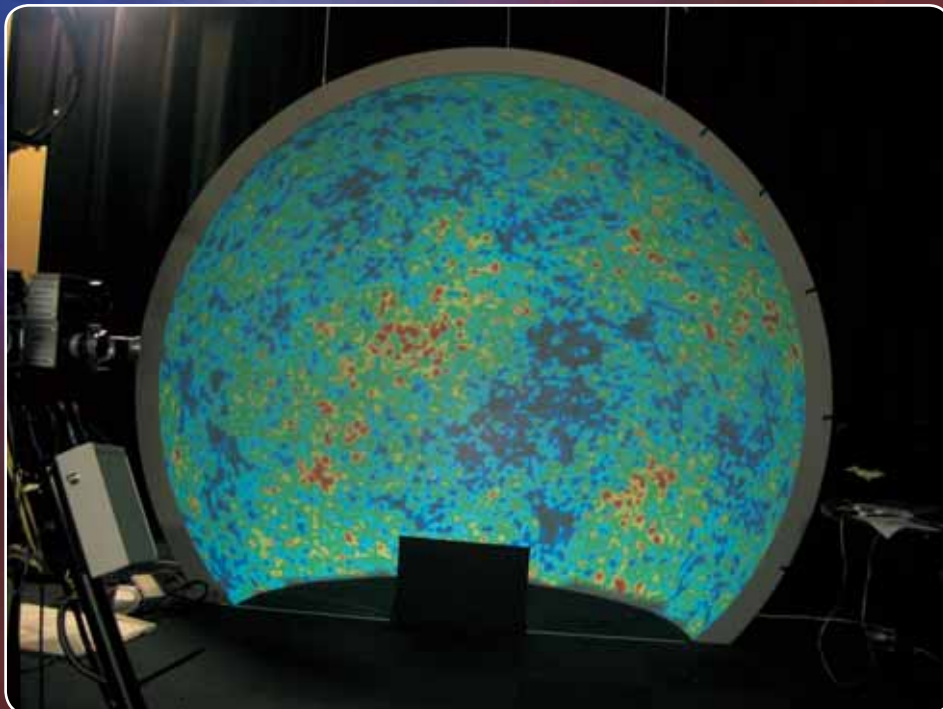
Projecting data sets onto immersive spherical domes provides new ways of interacting with data – here, a map of background radiation from the Big Bang.

New Apple Tech

iPhoning home

By far Apple's biggest event this year was the June 29 launch of the iPhone, which delivered on Steve Jobs' announcement of the product six months earlier. Unprecedented enthusiasm accompanied the iPhone's debut, which saw many eager buyers setting up camp outside Apple Center and AT&T phone stores across the US.

Reception lived up to the hype, with far-reaching praise for the new device and fans eagerly proclaiming that it had been worth the wait. Weeks before the launch, however, Apple set the agenda for developers by announcing that there would in fact be a way to write applications for the iPhone – by using the embedded Safari Web browser to run Ajax-based interactive applications.

By building applications around open standards, Apple has progressed support for Web-based applications whilst delivering on Steve Jobs' original vision of a device that would not be unnecessarily compromised by third-party applications.

Just how this opportunity plays out will become clear over time, but the growing number of iPhone capable applications suggests that developers are warming to the possibilities of the Ajax-based application platform. By the time the iPhone debuts in Australia and elsewhere early next year, there will be a strong body of developer knowledge around the device, helping interested developers to make the most of the industry's premier media player-cum-smart phone.

Faster iMacs, newer look

Apple's August 7 iMac event breathed new life into the hugely successful all-in-one iMac range of computers, which have been instrumental in helping Apple's PC market share outpace the growth of the overall PC market (first-quarter iMac sales increased 36 percent over the same period a year ago).

Front and centre was the new lineup of iMacs, which not only got a feature upgrade but enjoyed a major redesign that combines a recyclable, brushed aluminium body and black-rimmed monitor bezel. The new systems are thinner than their predecessors, feature a new ultra-thin aluminium Apple Keyboard that measures just 8.4mm thick at its front, and come in 20-inch and 24-inch sizes.

Inside, the new iMacs feature the latest technology, including Intel Core 2 Duo processors at up to 2.8GHz; 1GB RAM expandable to 4GB; 802.11n-compatible AirPort Extreme wireless networking; and up to 1TB of internal hard drive storage. Also included is the new iLife '08 applications bundle. Configurations include:

For $1698 RRP Inc. GST: 20-inch display, 2.0GHz Intel Core 2 Duo processor, 1GB RAM, SuperDrive, ATI Radeon HD2400XT graphics with 128MB RAM, 250GB hard drive

For $2149 RRP Inc. GST: 20-inch display, 2.4GHz Intel Core 2 Duo processor, 1GB RAM, SuperDrive, ATI Radeon HD2600 PRO graphics with 256MB RAM, 320GB hard drive

For $2599 RRP Inc. GST: 24-inch display, 2.4GHz Intel Core 2 Duo processor, 1GB RAM, SuperDrive, ATI Radeon HD2600 PRO graphics with 256MB RAM, 320GB hard drive

For $3399 RRP Inc. GST: 24-inch display, 2.8GHz Intel Core 2 Duo processor, 2GB RAM, SuperDrive, ATI Radeon HD2600 PRO graphics with 256MB RAM, 500GB hard drive

Improved multimedia

The debut of the new iMacs was also marked by the launch of iLife '08, a significantly improved version of Apple's digital lifestyle applications suite.

Each application in iLife has been imbued with new features. iPhoto, for example, now groups all photos into Events, which use a single picture to represent a day's worth of photos. Moving the mouse over an Event allows the user to quickly skim through the photos, which can also be split for multiple events on a single day. Users can hide photos they want to keep but don't want to see all the time, and pictures can easily be published online using the new .Mac Web Gallery feature.

iMovie '08 has been completely redesigned from the ground up, with a focus on enabling users to quickly and easily produce vibrant videos. Support for the latest video cameras, the ability to skim through clips at normal or fast speed, and easy export to iPhone, iPod, Apple TV or YouTube videos are just a few of the new features. Movies can also be published online with a few clicks using the .Mac Web Gallery feature.

For the musicians among us, GarageBand '08 adds a virtual 'band' playing user-selected instruments as well as advanced features such as multi-take recording, easier arrangements and support for 24-bit audio interfaces. And iWeb '08, the upgraded Web design software, enables live interactive content such as Google Maps; targeted ads using Google AdSense; photos or movies from .Mac Web Galleries; a range of new themes; and hosting of iWeb sites using personal domains.

iLife '08 costs $99 RRP Inc. GST.
For more information, see
www.apple.com.au/ilife/.

iWork, therefore iAm

Another upgraded application announced on August 7 was iWork '08, the productivity suite that this year gets a new member: the Numbers spreadsheet.

Fitting alongside Pages and Keynote to fill out the three major productivity applications, Numbers offers a full range of spreadsheet capabilities – for example, 150 different functions, live 2D and 3D charts, as well as new features such as intelligent tables on a flexible canvas, which let users arrange elements without breaking the structure of the spreadsheet.

Pages '08, the word processor of the package, now includes two separate operation modes including streamlined word processing, for straightforward document creation, and flexible page layout, which lets users control every element of the page. A contextual format bar changes depending on the task the user is performing at the time, while change tracking allows users to easily collaborate with others when creating a document.

Finally, Keynote '08 has been given the new Smart Builds feature, which makes it easy to create animations simply by dragging and dropping relevant pictures, then using animation controls to manage rotation, movement, scaling and opacity. The Instant Alpha feature speeds the process of removing unwanted backgrounds from photos and graphics. Voiceovers can be overlaid on top of presentations, which can be bundled for delivery via the Internet, YouTube, or podcasts.

All iWork applications can import and export Microsoft Office application formats, and can export in PDFs for print-ready document sharing. Learn more about the $99 RRP Inc. GST iWork '08 from *www.apple.com.au/iwork/.*

Making more of .Mac

Rounding off Apple's latest new product announcement was a suite of improvements to .Mac, the online companion service to the Mac environment.

Foremost among these is the previously mentioned .Mac Web Gallery, which lets members post their pictures and videos online for access by anybody, or by specific people. Using a desktop-like interface that works the same on Macs and Windows PCs, visitors can navigate through galleries using the same 'skimming' gesture built into the new iLife '08 applications.

Through tight integration with iPhoto '08 and iMovie '08, users can quickly and easily upload their content for sharing. The new .Mac also ups available storage space for members, jumping from 1GB to 10GB for individual members and jumping from 2GB to 20GB for family memberships. Maximum email size has also increased to 20MB, which is even better utilised thanks to improved built-in spam filtering.

.Mac costs $139.95 RRP Inc. GST for individuals and $249.95 RRP Inc. GST for a five-account Family Pack. Learn more at *www.mac.com.*

Striking Gold with Quartz

Object and event-based programming makes scripting straightforward

Luke Toop may not have expected to end up as a developer, but a varied CV has led him back to university to pursue a second degree that has been driven in many ways by the capabilities of Mac OS X's Quartz imaging system. Luke's experience with the technology came about gradually, after he spent around 18 months providing video jockey services for pubs and clubs around Adelaide.

In those days – the heady times after completing a law degree at the University of Adelaide – Toop was using a Windows laptop to manage and deliver the huge volumes of video and graphical footage he used in his sets.

It was always a somewhat limited solution, however: "You'd have a very grainy picture that would start getting clunky immediately if anything interesting happened," Toop recalls. Feeling there must be something better, he experimented with Linux before making the switch to Mac OS X. "I haven't looked back," he laughs.

Because of his heavy involvement with video projection, Toop needed a reliable computer that was capable of handling a variety of media smoothly and effectively. Experimentation with Final Cut and Motion, which remain the primary applications for his VJ work, confirmed that the media capabilities of the Mac platform were much better suited to his requirements.

"Quartz Composer lets you play with videos at full frame rates and smoothly," he says, "which is really nice when the point is to get people inspired rather than having them wonder what they're looking at."
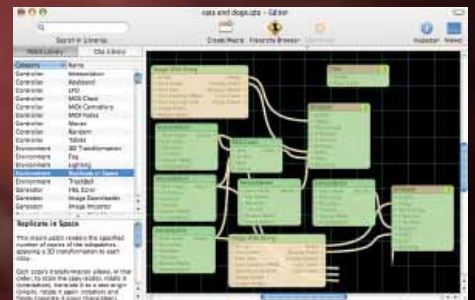
Luke eventually drew on his legal skills to set up MediaUplink, a business that specialises in audio-visual setups and digital signage. The team built a custom application to handle these capabilities, running it on Mac minis hooked to big-screen TVs at the venues. As his requirements grew more sophisticated over time, he stopped dabbling in Quartz Composer and began working with it steadily.

"We decided we were going to develop applications and needed to do video stuff without any flaws," he says. "The platform couldn't fall over or else we'd be in a lot of trouble. We tried out a number of things both with Quartz Composer and without it, and it was absolutely brilliant for that. It integrates really tightly with other applications that you're writing, and being able to drag and drop the programming is really handy."

His growing experience with Quartz Composer – which he is sharing as practical advice in a presentation at this year's AUC Academic & Developers Conference on the Gold Coast – has been underscored by his decision to return to university to pursue a second degree, this time in Computer Science.

"I didn't want to work as a lawyer but it was very useful for running a small business," he says. "But I just found I was bumping my head against not quite knowing the maths or programming to proceed further and faster."

As the business continues to grow, Luke is finding new uses for his growing Quartz Composer skills all the time. When experimentation is easy, he says, it's easy to play around with the building blocks to see how interesting movies and animations are being produced – and then breaking down those clips to figure out how the effects were created.

"Quartz Composer lets you play around with real-time 3D visuals that were difficult or impossible to do in other contexts," he says. "It's a really excellent application that deserves a lot more attention; the more popular it is, the better off everyone in the community is."

Quartz Composer proves invaluable in the hands of video jockeys

12.1 SURROUND SOUND

What do you get when you combine a GPS navigator, a leisurely harbour cruise, Mac OS X and the creative minds of several University of NSW digital artists?

The answer became clear during a recent conference in Sydney, where attendees were given the chance to go on a series of regular one-hour cruises around Sydney Harbour on a boat that had been specially rigged for the occasion.

That rig included a dozen speakers spaced around the perimeter of the boat, pointing in towards the centre so that passengers standing in the boat's middle were literally surrounded by sound. Those speakers were driven by a Mac OS X computer, which had been linked with a GPS receiver and tied to a database of audio narration and interesting facts.

As the boat moved, projecting its position onto a map would tell the application as the vessel passed points of interest – suburbs of historical interest, bird rookeries, floating buoys or any other type of object. By projecting relevant sound bites through one or more of the speakers, the artists – led by well-known sculptor and sound artist Dr Nigel Helyer – were able to immerse passengers in a full 360-degree soundscape that Dr Daniel Woo, a lecturer in the UNSW Department of Computer Systems & Engineering, calls "augmented audio reality."

For the Sydney Harbour voyage, sound bits included a narration about the preservation of The Rocks from labour history expert Jack Mundy, discussions about Captain Cook and shark attacks in Sydney Harbour, industrial sounds in Darling Harbour, sonar and nature sounds, and more.

"This is not just about being technologists who can create cool technology," Woo says, "but about trying to design and create experiences for your users. It's software engineering and the user centred design approach fusing together. We're trying to empower artists like Nigel to be able to imagine and conceptualise these new art forms and new media experiences."

The Sydney trip – which was captured on camera by a team from The Discovery Channel – was actually the second time the setup had been run: in 2004, an early test as part of the 5th International Symposium on Electronic Art in Helsinki saw the team's debut on a boat cruising between Helsinki, Stockholm, and Tallinn. Among the highlights in that trip was a sequence of sounds from buoys along the trip, which tapped out the lyrics to an ABBA song in Morse code.

The technology behind the project, which was supported by an Australian Research Council grant, was developed by a five-strong team of PhD and Masters students, who also called upon the voiceover talents of students at the National Institute of Dramatic Arts.

Using the Subversion version-tracker application, the development team was able to build the core application for the display using XCode, Cocoa and Interface Builder. The audio mixing capabilities, supporting the 12-channel surround sound, were built from the ground up to link in with the interactive music capabilities of the Pure Data open source project.

As an ongoing effort, Woo says the enforcement of development rigour has helped the team continually improve the capabilities of the installation. The system is set up in a studio and regularly improved, while future projects are being explored as opportunities arise.

"You've got a collection of people that want to go out there and change the way the world thinks," says Woo. "Mac OS X is a great platform for putting it all together. Being able to use Cocoa and other development technologies makes this thing happen really quickly. And by doing this iterative development cycle, we've been able to improve what we do, and understand what works, and what doesn't. Any technology where a developer gets to write less code can give you that productivity."

Big brains, big storage

Scientists love great new technology, and the boffins at the University of Queensland-based Queensland Brain Institute (QBI) are no exception. But their love of new equipment has implications, as IT manager Ian Duncan found out recently while discussing storage plans for the new facility into which QBI is moving this month.

One new Magnetic Resonance Imaging (MRI) machine, for example, can produce images of up to 250GB in size. At this rate, it doesn't take long before even the most robust storage systems begin to creak.

While many of the institute's new machines produce large files, others produce smaller files – and lots of them. Duncan estimates that an average PhD student might produce up to 5,000 microscope images, each between 2MB and 20MB in size. That kind of data adds up quickly: "It's all very well that scientists buy whiz-bang instruments," Duncan says, "but we then need the storage to hold the data they generate."

Meeting this challenge became a major issue as Duncan spec'd out and implemented the IT facilities in the new location. QBI's long-running investment in Apple desktops quickly led him to consider installing Xserve RAID equipment, but a deeper consideration of the types of files QBI was going to be dealing with eventually led him to a hybrid solution.

"We have a huge number of relatively small files, so we needed to look around for a file system that could deal with our particular pattern of data," he explains. "In addition we wanted complete redundancy for the system: if we lost one entire room of machines, we had to be able to keep going. We also need to deal with an expansion from 90 to around 250 members of staff."

In the first instance, Duncan opted to build a 20TB storage area network (SAN) around high-end storage from Sun Microsystems, whose years of experience in high-reliability storage suited the mission-critical and irreplaceable nature of QBI's data.
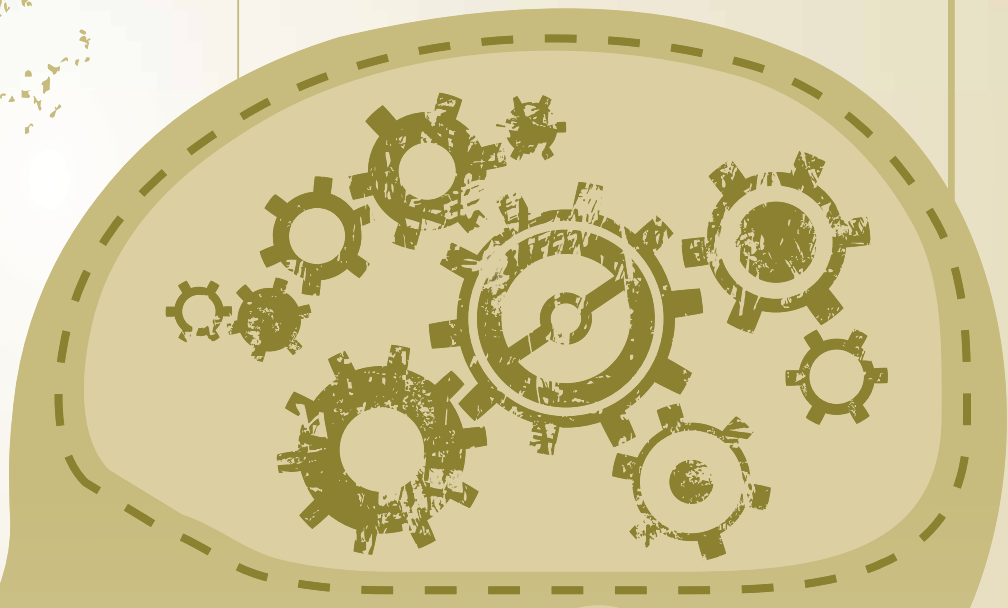
To ensure data is never lost, the SAN was architected around a two-building setup in which data is continuously and immediately copied from Fibre Channel SAN components in one building to SATA components in the second building. In each building, data is also copied to backup tapes. As an added layer of protection, data is also replicated from the high-end SAN disks to a lower-cost array of SATA hard drives in the primary building.

"In the Sun system, as far as the user is concerned, they don't know what their file is actually living on, whether it's in cache, SATA hard drive, loaded tapes or even ejected tapes," Duncan said. "They can retrieve, say, a 5GB disk image from the SATA tray in another building almost as fast as if it were on local disk. This means we can tailor how we use the different types of disk for different users and functions."

As the QBI's desktops are currently configured using Networked Home conventions, the team began addressing challenges in linking the Sun storage with the institute's Apple directory service, which is necessary to ensure that data permissions flow correctly from one environment to the other.

Directory integration will also be necessary to facilitate smooth interactions between staff at the new building. "We've designed the building with an emphasis on collaboration, and that means we need a very flexible infrastructure behind it," he says.

"We want people to be able to pick up their laptops, move to another part of the building or sit outside, and still have access to their resources. We also need to let people from outside the building have access to certain internal areas, and all of this has to fit into UQ's ICT rules."

"Originally we said the Sun storage would be enough for everything we needed for 5 years – but this was not the case. One researcher came to me and said 'I might generate about 10 terabytes of data per year over the next three to five years', and was that going to be a problem," recalls Duncan.

Instead of just purchasing more Sun disk, Duncan's explorations revealed that Apple's media heritage made the Xserve RAID well suited for dishing up the large individual files instruments generate, which involve high-speed sequential disk reads. He proceeded to complement the QBI SAN with 10TB of Xserve RAID storage which is used to store large data files as they come off the institute's instruments.

"The Sun cache space is relatively expensive, and it doesn't make sense to put data on that that we may only be keeping for archive purposes," Duncan explains. "The Xserve RAID is a great solution as it can play the additional role of supporting our new computational cluster of 16 quad-processor Xserves".

Mr Ian Duncan

Entropy hits the Xgrid

By David Braue

When your entire research focus is built around ridiculously large jobs processing numbers, no amount of computing power can ever be enough.

For Gareth Evans, a PhD student in the Department of Mathematics at the University of Queensland, this unavoidable truth led him to use an Xgrid based computing environment that harnesses the surplus computing power of laboratory computers that were previously sitting idle at night.

The problem he wanted to tackle was the cross-entropy method, an analytical method developed in 1997 by Reuven Rubinstein that enables quick evaluation of potential solutions to a mathematical problem. The method works by generating a series of random samples across all possible solutions, then comparing them and scoring them based on their similarity to the data being analysed.

Cross-entropy optimisation is an iterative process that requires a large amount of computing power to handle large data sets; for this reason, it has usually been handled on high-end parallel processing machines. For the same reason it was a natural target for explorations into the power of Xgrid, which were occasioned by senior lecturer Michael Bulmer after Evans delivered a paper on parallel processing-based cross-entropy optimisation solutions in the US.

"He was looking at this Xgrid thing and asked whether I could think of anything interesting to do with it," Evans recalls. "I've been using the cross-entropy method on biological problems, and while they have 64-processor parallel machines at the university, everyone has to use a queuing system. It would take me over a week to get through the queue to get access to just 32 processors – and if there was a bug in my code, I had to wait another week."

A major component of the effort was the integration of the Message Passing Interface (MPI) standard – which allows communication between nodes in a compute cluster – with Xgrid. Evans worked to incorporate the OpenMPI implementation of MPI (www.open-mpi.org) into the environment, and eventually began scripting to test the configuration across 159 desktops computers in nearby laboratories.

To help the setup stretch its proverbial legs, Evans – who shared his experiences with attendees at the AUC Conference on the Gold Coast – wrote a PHP script that tasked the cluster with a relatively menial job: computing pi, the infinitely long number that represents the ratio of a circle's circumference to its diameter, out to 1 trillion digits.

That task completed in around 2.2 hours – a time that Evans is quick to point out was the result of "by far not an efficient method for calculating pi", but proved that the Xgrid cluster and OpenMPI implementation were working correctly.

Since then, he has been running cross-entropy calculations across the new environment and has found the architecture provides a highly scalable way of getting access to significant computing power. The process offers near linear scalability: with 120 processors in use, performance was around 110 times as fast as using a single computer – without having to wait days for access to a shared system.

At least, that's how it is working now. As word gets out, Evans says other parties are starting to ask how they might access the cluster, which is forcing discussions about setting up a queuing system so jobs can be run through the Xgrid cluster with some semblance of order.

With tests successfully proven, Evans is looking forward to pushing the cluster to new extremes, particularly when the university replaces the current PowerPC processor based machines to Intel-based systems later this year. The dual-core design of those computers "will take us to around 300 processors," he laughs. "I'm not sure how much benefit it will be to go to that many processors, but it's definitely going to be fun trying."

Development, with honours

Honours years are an excellent way for keen students to build their expertise and add depth to their university experience. They are particularly relevant for graduates in computer science and related disciplines, since they provide an excellent way for students to put into practice all the theory they have spent the previous three or more years learning.

In recognition of the considerable self-motivation and sheer hard work it takes students to complete an honours program, the AUC has this year awarded eight $4000 scholarships to assist honours-year students in completing their work.

This year's recipients were:

Ben Swift
Australian National University

Kavinda Jayasinghe
La Trobe University

Sam Pohlenz
University of Adelaide

Jonathan Sokolowski
University of New South Wales

Myung-Hee Kim
University of New South Wales

Alex Mellor
University of Queensland

Sheryl Soo
University of Sydney

Kimberley Upton
University of Sydney

As we are well past the halfway mark in the year, we touched base with the recipients to find out how their work was going. Here's what a few of them had to share.

Sam Pohlenz
The University of Adelaide

What was your undergraduate degree in:
Computer Science

What is your honours project about:
My project is focused on Web services – in particular, context aware Web services. This means a Web service will look at things like the user's location, or perhaps the device the user is currently using, and adjust itself accordingly. 'Context' in this context may cover things like location, user preferences, device types, or even the current weather.

What have you completed so far:
My supervisor has developed a Universal Modeling Language (UML) model, called Context UML, that can be used to described context aware Web services in a generic way. Using model transformation, we can convert that to an executable Web service. I'm basing the UML editing tool on ArgoUML, a Java-based open source UML diagramming tool.

What else do you have left to do:
I'm still working on the model transformation of it. At the moment, we have a system where we can build up a context aware Web service using the Context UML profile, and the next steps are going to be to convert that into an executable Web service.

How has the AUC scholarship helped you:
It has allowed me to reduce my hours spent at work, so I can spend more time on my Honours project.

What are your long-term plans: I'll do a thesis on the project at the end of the year, and hopefully will be able to release a paper and get that published at a conference. That's my personal goal for this year. For next year, I have accepted a job in San Francisco with Good Dog Design, the company I'm currently working for in Adelaide.

Ben Swift
Australian National University

What was your undergraduate degree in:
Pure mathematics

What is your honours project about:
I'm a musician and I'm interested in new ways to make music with a computer, particularly those that are involved with direct measurements of neural activity. A study in 2005 suggested that when musicians listen to music, they show an increase in synchronised activity in the brain.

I'm creating a music generation engine that generates electronic music, and an EEG device that measures the neural activity of the participant in real time, then measures synchronised brain activity. I want to control the output of this engine based on the attention that a participant is paying to the music they're listening to. As you pay more attention, the computer will respond by doing more detailed music.

What have you completed so far:
The music generation engine. It's a rule-based algorithmic composition unit that generates drum beats and MIDI notes. It uses a musical space that you can do walks through, and they end up being pleasing to the ear. The system is also quite modular, so if somebody had their own algorithmic composition unit, they could plug it into my system and control the output with their brainwaves.

What else do you have left to do:
I'm testing it at the moment, using fake neural data where I know beforehand how much synchronized activity there is in this data. Then I test it to see if the system is picking it out in a meaningful way. All you're pulling from the brain is this one parameter, between 0 and 1, which is an index of musical attention. The two boxes aren't talking to each other yet; we're just doing some testing to make sure the brain box works, then we'll connect them up.

How has the AUC scholarship helped you:
I used it to buy a Macbook and Logic Pro, which I've been doing all my music stuff on. I wasn't a Mac user prior to getting this scholarship, but this music generation stuff is what Macs are really good for. The operating system has been designed from the ground up to have this MIDI and music function. To try to get that sort of thing out of a PC is like trying to get blood out of a stone.
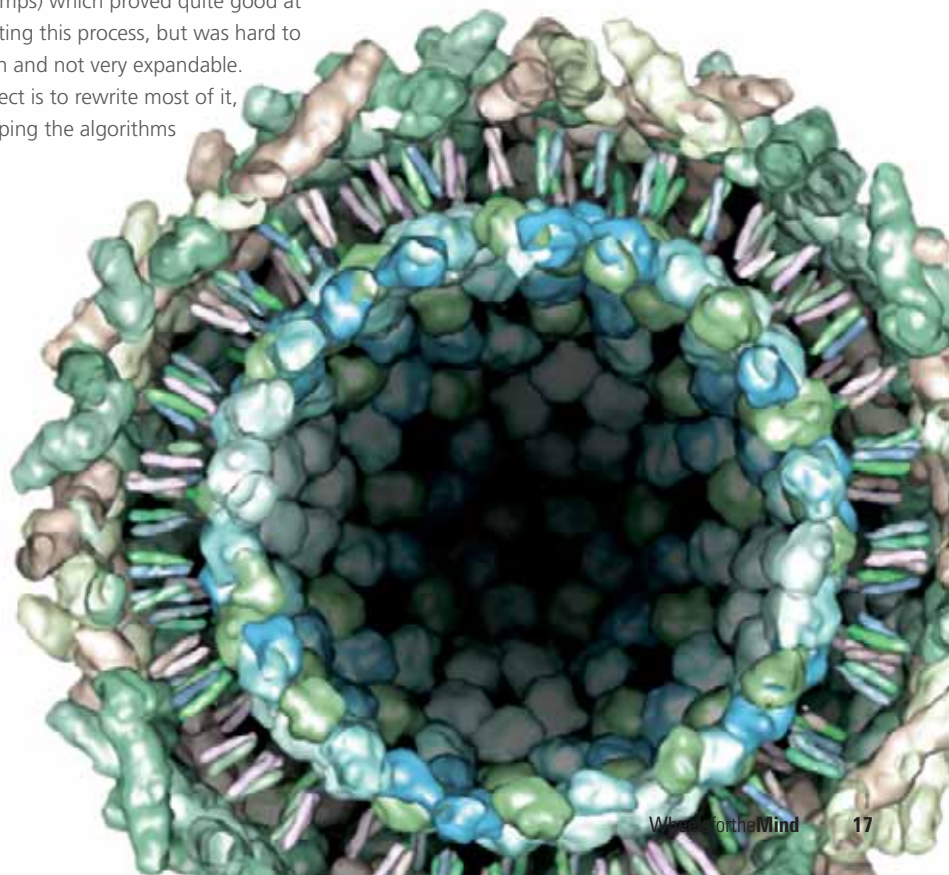

Alex Mellor
University of Queensland

What was your undergraduate degree in:
Software Engineering

What is your honours project about: Single particle analysis lets us generate 3D models of proteins by taking heaps of 2D pictures using an electron microscope, and stitching them together. You might need 100,000 individual images of the proteins to be able to get the resolution down to around 4 angstrom. But until recently, you had to have someone go and click on each image and organise it into some sort of primitive diagram; when you have to pick 100,000 of the things that can take weeks or months.

I did a summer scholarship involving a Linux project called SwarmPS (www.imb.uq.edu.au/swarmps) which proved quite good at automating this process, but was hard to maintain and not very expandable. My project is to rewrite most of it, just keeping the algorithms for automatic dissemination, and build it as a multi-threaded, cross-platform, really extendable program for doing this.

What have you completed so far: I've currently got possibly 70 percent done. I've used the open-source NLM Insight Segmentation & Registration Toolkit (www.itk.org) to get access to ready-to-go, professionally tested image processing filters there. I've built my app using C++, which is why I use the Apple; it's really nice to develop on, and has a stable set of libraries and tools for debugging OpenGL interfaces.

What else do you have left to do: Testing is the major thing, although there are minor code changes left to do. I think it will be a bit more accurate and a lot quicker for people to use, and that's the major area where I want to show what progress I've made. I've lined up people to do some testing to compare the picking speed with the old system versus picking speed on mine.

How has the AUC scholarship helped you:
I went out and bought an Apple Macbook Pro to test it on. I had been borrowing a system from other people at the time and wanted to decide that this was the base platform. Building on the Mac has been excellent.

World
2007

By Carrie Osborne

Starting and ending with feature presentations from renowned Apple employees, the core of X-World consisted of a variety of hands-on workshops and technical presentations - with plenty of opportunities in-between for mixing with other attendees. Higher-education Mac support staff, lab managers and network administrators from across the country travelled to Sydney to attend this three day event at UTS. The variety of sessions available catered for staff new to OS X through to the more experienced Unix gurus. And of course, this wouldn't all be possible without the wide range of presenters and invited speakers - from university support staff to international Apple consulting engineers. This amounted to a substantial conference where presenters and attendees could share their experiences, knowledge, tips and tricks with each other.

The conference kicked off with a feature presentation from Stephen Atherton, Queensland Apple Higher Education Manager, who updated the audience with the latest announcements from the 2007 World Wide Developer's Conference, held in the USA a few weeks earlier. Attendees got a sneak peak of what Leopard is shaping up to look like and some useful advice on how the release of Leopard might impact the university environment in Australia. At the close of the conference, Steve Hayman – a National Consulting Engineer from Apple USA (based in Canada), captured the audience with an entertaining presentation on Leopard for Australian Developers. After refreshing the crowd with his insights into the differences and similarities between Canadian and Australian toilets, he showed attendees that Apple's developer tools are not only for programmers. Several Leopard developer features and tools were demonstrated – showing that these tools can also be relevant and useful to people who manage and maintain OS X installations. Following on from the closing keynote, a round table forum was held which gave attendees one last opportunity to ask any questions that hadn't yet been tackled – to a large group of experts at the front of the room.

Hands-on workshops were the backbone of X World 2007 and provided attendees the opportunity to learn directly from the experts in three-hour segments. Presenters included local Apple consulting engineers, fellow higher-ed Mac technicians and two representatives from Apple USA. The majority of topics on offer were at a basic to medium level, with a few advanced sessions for the more accomplished attendees. These workshops provided a good overview of the topic or product through practical examples and exercises and a quick peek at some of the more relevant advanced features. Product-orientated sessions showed attendees how to best install, configure and monitor Apple hardware and software. Troubleshooting sessions showed attendees how to effectively diagnose and troubleshoot problems using built-in and third party tools. Whilst purpose-specific workshops demonstrated how to use sets of tools together to achieve powerful solutions. In addition, most workshops provided tips on how to save time and effort in order to ease administration workload, and in some cases gave ideas for further expansion and customization to suit different environments and scenarios.

ARD 3 was one of the most popular sessions, presented by Nader Nafissi, the product manager for Apple Server and Storage Products. This session looked at how to effectively use ARD 3 and its built-in tools for remote management and reporting, and provided some great tips on how to use Automator in combination with ARD to take things to the next

level. The opportunity to receive hands-on training customized for people working in the higher-ed sector is quite rare and it was great to be able to directly ask the experts questions.

At the same time as the hands-on workshops, a number of technical presentations (plenary sessions) were held in the main hall. These 45-minute presentations allowed people to share the interesting projects that they have been working on back at home. By sharing industry experience and best practice tips, presenters enlightened the audience on how to best make tools and technologies work together in a real university environment, including some useful "to-do's" and "what not to do's". Most sessions described the processes the team went through in making their projects work – from planning to testing, finding faults and implementation, through to operation and maintenance. A common thread revealed in most of these sessions showed that there is a big push to make Mac users more integrated, and these opportunities seem to be expanding as Macs and Mac servers are becoming more popular. Some sessions discussed how Mac OS X has made complicated processes easier (eg. Content Management Systems), whilst others explored new and upcoming tools (eg. Intel virtualisation and Bootcamp), and upcoming projects that may affect us all (e.g. the PKI Advanced Authentication project for Australian Universities). It was interesting to see what exciting projects

are happening at other Australian universities and again, people made the most of the opportunity to directly ask the knowledge experts questions.

With so much learning packed into three days, it was great that there were plenty of breaks – which gave time to mix with other attendees and put faces to names. Talking to others outside of the classroom setting allowed delegates to share their own ideas and solutions. The social highlight, the conference dinner was held at the star room, on the top level of the Imax building – overlooking Darling Harbour. Many experiences and stories were exchanged over pre-dinner drinks and the wonderful dinner. As suggested at the conference opening, it is important to make the most of these occasions, to build a support network of colleagues – as we are all doing similar work and likely face common issues.

Overall, X World 2007 provided a good blend of hands-on learning with presentations and social opportunities. Not only did attendees take home relevant knowledge and skills, but they were also better equipped to think outside of the box, and more prepared for the changes that Leopard will bring, as well as having made a few handy contacts.

WWDC Images by James Verdon

Living the vida WWDC

Chris Freeman

*Desktop
Unit Leader*

Deakin University

What do you do? I head the Desktop Unit at Deakin University. We manage the Standard Operating Environment for about 400 Macs and 4500 Windows PCs.

What interested you about WWDC? We've got a couple of really clever Mac people, but I've never really been across the infrastructure that supported what we do on the Mac platform, until a couple of years ago. Sometimes you take on a role and there's the nagging truth that you don't know as much about it as you should.

What did you like the most? One of the biggest things I got was the Package Maker stuff. We use a tool called Radia for both our Macs and PCs, but there's no other cross-platform solution so we're locked into it – and all sorts of shortcomings. Package Maker is ten times simpler, and we'd feel safer using something we know is going to be widely used and supported. I also enjoyed sessions on Access Control Lists and PList Editor.

What did you dislike? Nothing specific.

What was your overall impression? The overall level of expertise of the presenters was really impressive. They took a lot of really tough questions at the end, were really agile, and demonstrated really good product knowledge. When you talk to these presenters, it's genuine. WWDC probably exceeds any other conference I've been to in terms of making sure people know their stuff.

Apple's WorldWide Developers Conference is always a worthwhile event, and this year's was no different. Held from June 11-15 at Moscone West in San Francisco, the WWDC had enough to delight every developer – most notably, a feature-complete beta of the Leopard operating system that was sent home with each attendee.

Leopard wasn't the only product to be showcased at WWDC. The event also saw the launch of Safari for Windows, a Web browser that was downloaded more than 1 million times in its first 48 hours; and the debut of new features in OS X Server version 10.5 including a wiki server, Podcast Producer for podcast delivery, and Spotlight Server for finding content on other servers.

Sending tongues wagging at the event was the announcement that the iPhone, the revolutionary phone and music player that will be available in Australia and New Zealand next year, will in fact support third-party applications written using Ajax techniques and running within the sandbox of the Safari Web browser. This announcement opened up extensive possibilities for those interested in building their own applications for users of the iPhone.

As it does every year, the AUC funded a large number of students and staff from member universities to attend WWDC. This year, a total of 33 staff and 29 students received from $3000 to $3700 each to cover airfare and accommodation for the trip to San Francisco. Feedback from the event was positive, with many recipients making the trip for their second, third or fourth time. Here's a sample:

James Verdon

Lecturer in Film, Television and Multimedia Design

Swinburne University

What do you do? I teach the Film & Television Bachelor's program, which is a production based course, and also teach in the Multimedia Design program. My area within those is post production, video compression, special effects, and digital video.

What interested you about WWDC? I'm an academic, not a programmer – kind of a techy content person. My main interest was the Content and Media stream.

What did you like the most? My main interest was the Content and Media stream, and the highlight for me was Quartz Composer. The demos were impressive, and it was something I hadn't really been exposed to before. I had been using things like Pure Data to do similar stuff – but the idea that I could create animations and images without being a programmer, and create Cocoa applications with a few lines of code, was the highlight.

What did you dislike? I was expecting, even in the developer context, some more coverage sessions about video beyond H.264. There was nothing related to, for example, ProRes 422 [the high-resolution post-production format introduced with Final Cut Pro 6]. That's a new codec that's had a huge impact right across the board, and it's architecturally quite different to anything that has come before. It would have been great to harness that.

Michael Macken

Technical Officer – Digital Audio & Video, School of Communication Arts

University of Western Sydney

What do you do? My role covers everything from IT administration – including four labs with 20 Macs in each – to looking after production stuff, producing CDs, DVDs, podcasts and more.

What interested you about WWDC? My background is more from the music production and video production side of things, so I've tended to use Macs for that sort of work. Since I started at UWS three years ago, I've also moved more into working with server based share points for students. I'm not really a developer, and this was my first WWDC.

What did you like the most? Some of the really relevant stuff was the information on podcasting, especially the tools in Leopard. There were a few good workshops on managing Xsan, and some refinements for lab image building and image deployment. Talking to other people was very valuable: there were a lot of people attending the conference who are in a similar situation to me – a university situation where a lot of other infrastructure is not Mac based – so sharing insights into how they've solve problems was very valuable.

What was your overall impression? I'd heard in the past that there wasn't much stuff for people like me, but there were more sessions that I wanted to go to, than I could go to. It was a really enjoyable conference, well organised and it was great to go to such a beautiful city. It was all good; there were no boring bits.

Jonathon Mah

Student

University of Adelaide

What do you do? I'm a 4th year student doing a combined degree in Computer Systems Engineering and Maths. I also do part-time server administration for a company in Adelaide that's using Mac OS X Server.

What interested you about WWDC? I'm mainly interested in Cocoa development, and also do a bit of graphics. I have been to WWDC three times before.

What did you like the most? I got the impression that Apple are really keeping up with new technologies; they're really looking into mixing Cocoa with Ruby and Python and other scripting languages that are starting to become popular now. The Core Image stuff looks pretty exciting and the Core Animation is always fun to play with; it looks like there are going to be a lot of cool things coming from that. There was also some interesting stuff about OpenMP [a multi-processing framework], which is good to keep in mind as dual-core processors start moving into everything.

What did you dislike? There were lots of people there, which can be a good thing and a bad thing. It's good that there are lots of people, but there's quite a bit of crowding all the time and you don't get to have the one-on-one time that you might want.

What was your overall impression? It compared pretty well the others I've been to. I went to more of the external events this time, and met with other small developers which was pretty good.
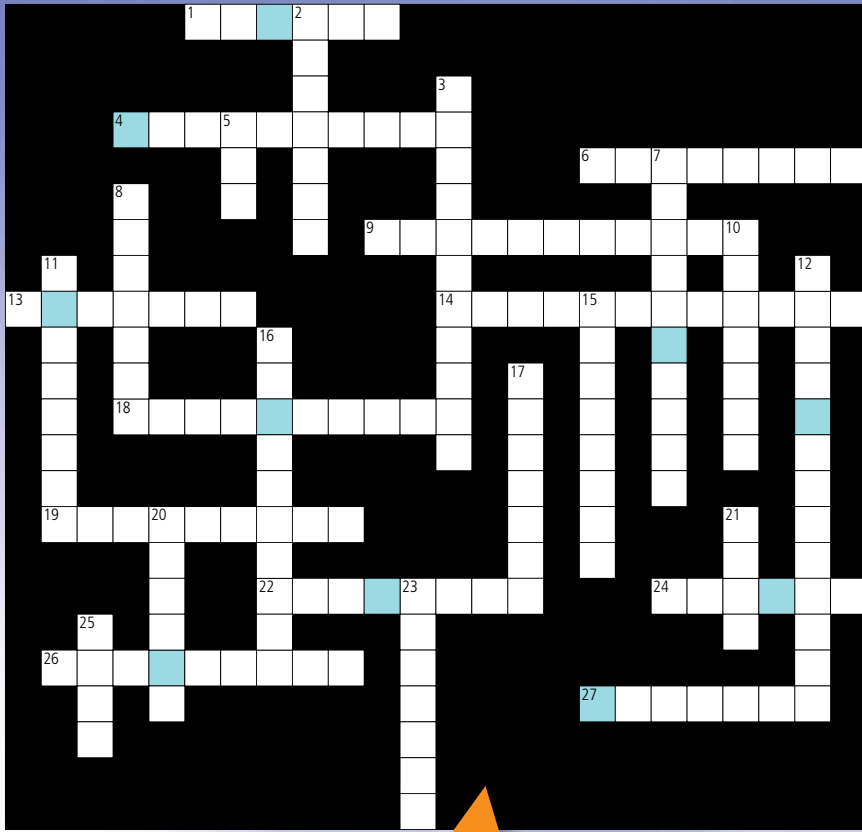
What they think about when you're out.
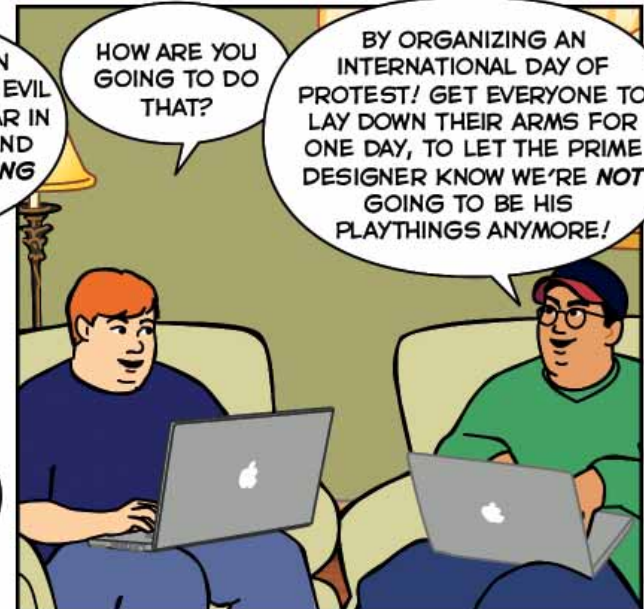
CrossWORD Competition

Across

1. Smallest screen in new iMac lineup (p10)
4. One conference theme (p4)
6. This app feeds on Ben's brain (p17)
9. Feature improves Keynote '08 animation (p11)
13. Sam's UML diagrammer (p16)
14. Chris' favourite WWDC session (p20)
18. Cross-entropy method creator (p15)
19. On Photoshop, rounded corners are this (p7)
22. Open-source music infrastructure project (p13)
24. This Web server powers Otago TV (p8)
26. Game of earth is this (p22)
27. This distortion looks right inside a dome (p9)

Down

2. Presenter of popular ARD 3 session (p19)
3. Toop's AV company (p12)
5. Number of GB in new .Mac account (p11)
7. Mike liked to bike on this bridge (p21)
8. Month of Macworld scholarship deadline (p4)
10. Mellor is improving this (p17)
11. Number of pi digits Evans computed (p15)
12. Previous QBI networking method (p14)
15. Zac & Nik's company (p7)
16. Lighten a specific area (p2)
17. Where Bourke's immersion began (p9)
20. Renowned soundscape artist (p13)
21. Standard for building iPhone apps (p10)
23. Play Windows games with this (p2)
25. iLife '08 puts this into GarageBand (p11)

WIN AN IPOD SHUFFLE

For your chance to win an iPod Shuffle, complete the above crossword (you'll find the answers throughout the articles) and take the letters from the blue boxes then re-arrange them to form a word.

Send this to: crossword@auc.edu.au

Competition closes at 5pm on Friday 2nd November 2007.

Congratulations

Congratulations to Alison McDonald of the University of Southern Queensland for winning an iPod shuffle by correctly completing the crossword to reveal the answer:

COLLABORATE

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