

MIND

Wheels for the

**MARCHING TO
THEIR OWN
GARAGEBAND**



**PUTTING THE
(MULTI) BOOT IN**



*Meeting
of minds*

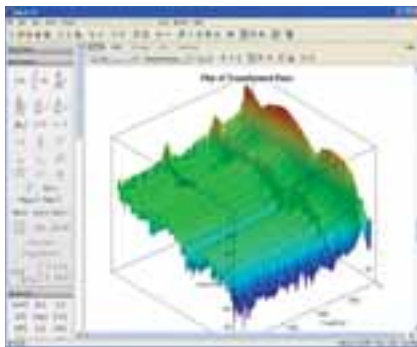


**Searching
for Truth in
Research**



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Advanced maths, Canadian style

If you're really, really into maths or statistical science, you're probably using a heavy statistical and analytical app for your work. Maplesoft's latest, Maple 12, does everything bigger, better, and faster than its predecessors – with features like links to CAD environments, DXF exporting, an optional MATLAB add-on, better plotting, interactive process components, an Exploration Assistant for experiment with variables, and more. Maple 12 comes in \$3000 (commercial), \$1815 (academic) or \$195 (student) versions from CEAnet, www.ceanet.com.au.



The strong, rugged type

LaCie is known for merging boring hard drives with interesting cases, and one of its latest creations may be particularly worth noting. The LaCie Rugged Hard Disk is designed to endure drops of up to 90cm, giving it a good chance of survival even if you knock it off your desk, or if your mate drives his 4-Wheel Drive over it. As a bonus, it's bright orange and therefore could be the thing that saves you if you're ever stranded on a boat. Pricing ranges from \$249 for a 320GB USB 2 version, to \$429 for the USB/FireWire400/800 500GB version. www.lacie.com.au.



More Creative than ever

It hasn't been long since Adobe released Creative Suite 3, but its latest iteration – creatively named Creative Suite 4 – updates most of Adobe's products and adds lots, and lots, and lots, of features. Drop by www.adobe.com.au to learn more about them all; pricing varies widely from \$349 for Soundbooth CS4 to \$4499 for the CS4 Master Collection.



Your music, where you want it

So, you love your music. And you love your house or apartment. And you want to get the two intimately acquainted. With Eos, just plug your iPod or other audio source into the main transmitting station, then plug in up to four wireless stereo speakers – each with SRS WOW surround sound – anywhere within a 45m radius. \$449 gets the base station and one satellite; extra satellites are \$199. www.eoswireless.com.au.



Let your Mac do the typing

You may already talk to your Mac, but now it understands: MacSpeech Dictate is built on the well-recognised Dragon speech engine from Nuance, but has been written for the Mac from the ground up, enabling accurate transcription and application voice control that is particularly suitable for physically handicapped users. It runs only on Intel Macs and costs \$329 rrp bundled with a Plantronics headset; macsense offers a 10% student discount. www.macspeech.com or www.macsense.com.au.



Fine-tune your hearing

If your Mac's current audio output is leaving you a bit uninspired, JoeSoft's Hear may be for you. A highly configurable real-time sound shaping tool, Hear includes detailed equaliser controls, bass boost, reverb, 3D space enhancements, limiting and compressor effects. A granular volume control controls the volume of each application, and presets provide instant enhancement for a range of content. Hear costs \$US49.95 from www.joesoft.com.

CONTENTS



- 2 Product Round-up
- 4 AUC Update
- 6 Taking Monash to the streets
- 7 Marching to their own Garageband
- 8 Read me a story, iMac
- 9 Putting the (multi) boot in
- 10 Apple Bytes



- 12 Meeting of Minds
- 14 Schooling the iPhone
- 15 Mapping the Grand Tour
- 16 Searching for truth in research
- 17 Tips & Tricks: Interesting iPhone apps
- 18 The Joy of Tech
- 19 Crossword Competition



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Editor: Stephen Johnston

Editorial: David Braue, www.braue.com

Production: Allegro Graphics **Design:** Meehan Design

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- 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
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- University of Canberra
- Dr Mahalingam College of Engineering & Technology, Pollachi, India

EDITORIAL



With global economic turmoil an almost daily headline, affecting many facets of society, it would be naive to assume that the global higher education market will remain unaffected. However, this may not be a bad thing. Like the business world,

where, during down-times, astute players reinvest in themselves and build internal resources to prepare for the inevitable upturn, education reflects this by looking more closely at what's really relevant to offer students both as professional pathways and a way of coming to terms with, and understanding, the change and constancy in the world.

Evidence has suggested that more students enrol during economic downturns than at any other time. Although this may be economically driven, it may also be that in times of uncertainty, people ask themselves the deeper questions, or seek more meaning in their lives and see re-admission or first time entry into higher education as an opportunity for personal growth and expansion via learning. The human quest for knowledge and truth seems independent of fashion and fluctuations; but is clearly enabled by opportunity.

In this edition, Mark McMahon further explores this quest and looks specifically for truth in research, and ultimately asks what is its nature, and who can, in context, determine its status or quality.

You will also read how AUC member universities continue to respond to the changing scenarios by the continual investment in Apple technologies, and ways to apply them to search for new truths. Monash University, for example, did this by redesigning their website to be more friendly to the iPhone. Jeremy Pagram and his team at Edith Cowan University took a novel approach and looked at how the iPhone can be utilised for in-class assessment of performance – and Iain Murray of Curtin University, who has spent over twenty years working on technologies for sight-impaired and disabled students, recently developed a broad range of capabilities to allow audio books to be more easily accessed.

But there are other features of interest to both staff and students alike. Mike Eastman at WAAPA looks at the marriage of music and technology and finds that creativity is abundant in the confluence of those apparently disparate disciplines. But you also might want to exercise your body and mind by performing one of Greg Giannis's 'walking performances' or find out what Carrie Osborne knows about cool tips and tricks for the iPhone. And for the technically savvy, read Jon Peacocke's solution to dual booting for lecture theatres at Melbourne University.

With the year now coming to a close, it's difficult to predict the landscape as we head for the final year of the decade in 2009, a year in which the AUC runs its biennial flagship conference in Canberra. I would invite you to submit papers to this conference via the AUC website, and share with us all your own particular knowledge and truths, which no doubt will add to the continuous debate about what can be known, and what should be known.

Stephen Johnston



AUC Update

A wealth of training



iPhone tech talks

Now that the non-disclosure agreements around iPhone development have been loosened, would-be iPhone developers are free to collaborate openly and enthusiastically. In the spirit of such collaboration, the AUC will host iPhone Tech Talks in Sydney (19 November) and Melbourne (21 November).

The talks will offer a wealth of iPhone-related development expertise, as well as access to development experts who can help optimise your code, refine your user interface and apply your knowledge to your own iPhone development projects.

The AUC is offering each member university four subsidised places to the events, including financial assistance in covering return economy airfares and, for those from out of town, accommodation during the event. For more information, visit www.auc.edu.au/iPhone+Tech+Talk.

Getting REALbasic



To promote the adoption of the cross-platform REALbasic development environment, the AUC will offer three-day workshops for Mac OS X developers that will cover the ins and outs of the object-oriented REALbasic application. Applications built in REALbasic run, without modification, across Mac OS X, Windows and Linux platforms.

Because it is a relatively straightforward environment aimed at non-professional developers, the sessions are geared at students and staff who are interested in programming Mac OS X; a basic understanding of programming languages like BASIC, C++ and object orientation is desirable, but not essential.

The three-day curriculum will walk attendees through the platform, general concepts about the software development process, an introduction to the REALbasic integrated development environment, basics of event-based and object-oriented programming, creation of a Web browser and a text editor, multimedia controls, events and interaction, REALbasic for real-world applications, and an introduction to REALbasic development communities.

The workshops will run in Melbourne from 24-26 November, and Sydney from 3-5 December. The AUC will subsidise attendance at the events for staff and students at member universities, with two nights' accommodation for out-of-state visitors and return economy airfare provided. Students must pay a nominal fee of \$50, and staff \$100.

For more information, drop by www.auc.edu.au/REALBasic+Workshop.

Ruby on Rails, and everywhere else



Students with a higher-level interest in development of Web applications will find value in the AUC Ruby for Mac OS X Workshops, to be held in Melbourne on 19-20 February and Sydney on 26-27 February 2009.

The events are aimed at staff of member universities and students who are studying computing science, computer engineering, information technology, mathematics, and have an interest in developing applications with Ruby on Mac OS X. No prior Ruby experience is assumed, and experience with Mac OS X using Cocoa and the Model View Controller paradigm is desirable but not essential.

Workshop topics include an introduction to Ruby, a comparison of Ruby with other languages, basic concepts of Cocoa development using Ruby, testing approaches, an overview of Ruby on Rails, and techniques for using Core Image, databases and other advanced Ruby techniques.

The AUC will subsidise attendance at the event with one night's accommodation and return economy airfare. Participants will need to pay a nominal fee of \$50 for students, and \$100 for staff. Applications for subsidy claims are due by 9 January 2009.

For more information, visit www.auc.edu.au/Ruby+For+Mac+OS+X+Workshop.

dev/world subsidy claims close soon

More than 100 attendees participated in the dev/world/2008 conference, held in Melbourne on 29-30 September, to share development tips and techniques with their peers and to hear expert speakers share their knowledge.

We have a rundown of the event in this issue, but for now this is a reminder that applications for dev/world subsidies must be received by 30 December.

Details are available at www.auc.edu.au/DevWorld+Subsidy.

Up to 70% off technical Mac training

Through a partnership with leading training organisation Dimension Data Learning Services (DDLs), the AUC has secured a standard discount of 35% off the rrp of DDLs' Mac OS X related training courses, including Mac OS X: Support Essentials, Server Essentials, Directory Services, Deployment, and Advanced Administration.

Courses are offered in all major capital cities, and the AUC is also offering a training subsidy for up to eight training attendees per member university. This subsidy includes an additional 35% course subsidy, accommodation subsidy, and airfare subsidy where needed.

For more details, see www.auc.edu.au/Technical+Training+2008 or www.ddls.com.au/VendCourse/APP.htm.

Macworld 2009 scholarships



The AUC is again offering scholarships for staff to attend the annual Macworld Conference & Expo, which will be held from 5-9 January 2009 at the Moscone Center, San Francisco, USA.

Each AUC member university has at least one allocated Macworld scholarship, which will provide recipients with a financial subsidy to help cover the cost of return airfares, seven days' accommodation, and registration to the conference.

The event is always interesting, and past recipients have been universally happy and enthused with their experience there. Visit www.auc.edu.au/MacWorld+Scholarships for more information on the conference and available scholarships.

Conferences galore

AUC events have been well received in the past, so we're eagerly looking forward to the next iteration of two of the AUC's main events. Both are currently in the call-for-papers stage, and both will offer subsidies through the AUC's normal processes. So if you would like to be involved in any way, read on.

CreateWorld 2008, 8-10 December

Griffith University's Brisbane South Bank Campus



CreateWorld 2008 is a three-day performance, presentation, and technical development event targeted at academic and higher-education technical staff working in the digital arts disciplines. Sessions include presentations of new media work, techniques and approaches in practice-led research fields such as photography, cyber-arts, music, e-learning, film, animation and design.

With its overall conference theme focused on 'the art of serious play' – "curiosity, creativity, craft and connectedness in the digital age" – the event is sure to be loaded with interesting content.

Or, it will be, if you nominate yourself or someone you know to present there! Submissions are due by the beginning of November, and selected authors will receive airfare, accommodation and conference registrations.

If you'd like to attend but are fresh out of fresh ideas, worry not: the AUC will offer each member university subsidies for four attendees. Each subsidy will include return economy airfare to Brisbane, twin-share accommodation for three nights, and a discount on registration. Contact your institution's AUC representative for more information on subsidies.

For more information or to register for CreateWorld, visit www.auc.edu.au/Create+World+2008.

AUC Conference, 27-30 September 2009

National Convention Centre, Canberra



As we rush towards the last year in this decade, the AUC is preparing for its biennial conference, which this time around will be held at the National Convention Centre in Canberra.

Organised around the theme 'you can take IT with you', the conference is focused on the rich opportunities that become available from having access to data any time, anywhere. Academics, IT staff, developers and students will converge on the nation's capital to share information, ideas, philosophies, and practical advice on technology innovation, teaching, and learning using Apple technology in increasingly mobile higher education environments.

Expect the usual high-quality lineup of speakers, including international speakers to update us on the latest trends in development and thinking overseas. The 2009 event will also incorporate /dev/world/2009, for which developers and students may submit either academic papers for publication, or proposals for less formal papers which will not be published.

Papers for the conference are being solicited in three main streams:

Data: Data is all around us; we create, collect, modify, change, store, and use it every day – and it's a lot more than just numbers. As members of the university community, we need to manage this data so we can record, analyse, and change it as required.

Devices: Devices let us access and manipulate the data we create, while services such as WiFi and 3G are keeping us increasingly connected and changing the way we use even traditional devices such as the TV. How do these changes affect the teaching and learning experience?

Dreams: Anytime, anywhere, constantly connected communications are changing the world in many and varied ways. But what lies in the future for our universities – and how can we manage them – if we have no need to be on campus?

Submissions are due by 12 December. Successful papers will be peer-reviewed through a blind reviewing process and published, and successful authors will be funded to attend the event.

Students are also welcome to submit either a full paper or a report on a project they are working on; submissions will be assessed by the Program Committee, and selected students will receive funding to attend the conference including return economy airfare, registration and budget accommodation.

For more information, visit www.auc.edu.au/AUC+Conference+2009+Call+For+Papers.

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.

Taking Monash to the streets

When Monash University marketing staff wanted to extend the reach of their Web site, they went to Andrew Norman, web content systems manager within the university's ITS Web Centre.

One of the people responsible for maintaining the semantic HTML and CSS content behind Monash's ever-expanding Web site, Norman was well aware of the issues that mobile users face when accessing Web sites developed for the larger real estate of the average desktop PC. These issues had long prevented a more concerted investment in development mobile Web content, but the release of the iPhone changed all that for good.

With its big touch screen and user-friendly browsing capabilities, the iPhone is reinventing the definition of the mobile Web – and encouraging universities like Monash to explicitly support mobile devices for the first time. Driving the change, too, is the fact that in many countries – like South Africa, where Monash maintains its satellite Monash South Africa campus – the majority of students can't afford PCs and do all their Web surfing from mobile phones that often have just a fraction of the screen real estate.

"We've had many requests from people browsing the Monash Web site and complaining about the experience they're having," says Norman. "They're using things like Opera Mini, which doesn't have the features of Mobile Safari. To cater for this, you really need to strip things right back, but the request from our marketing people was 'how graphical can we be?' It's a bit of a challenge."

As he sat down with the marketing staff to discuss issues like content and branding on smaller mobile sites, Norman hit a significant hurdle: he didn't actually have an iPhone to demonstrate the site to them on.

Rather than using a real iPhone to demonstrate the modified site, early work on the iPhone site was done using Apple's iPhone Simulator application, which showed the screens but did little to give his colleagues a real sense of how students might interact with it.

"The upper levels of marketing staff were very resistant even though they had requested this," he recalls. "Because people couldn't actually see the iPhone optimised site on an iPhone, many people were very resistant."

Nonetheless, an iPhone-friendly site was trialled during a recent university open day, with enough success that the university is considering a site-wide revamp starting next year. Recognising that this was the start of what is likely to become a major content project, Norman contacted the AUC and was supplied with a loaner iPhone 3G that he has since been using to demonstrate the evolving iPhone site.

Feedback so far has been good – and given Norman many pointers on the way the university's mobile sites should develop.

For example, many mobile users – even those using iPhones – want stripped-down sites with links to other relevant sites, simply because their mobile bandwidth allowances are so strict that they don't want to waste them on bandwidth-intensive bells

and whistles. "They prefer to start their experience with smaller, optimised pages and then move across to other ones only when they need to."

Another recurring message: small is good; mobile users don't want to have to scroll around the Web site, or zoom in or out, any more than they have to.

This message has significant implications for the creators of content – think small. Rather than sprinkling large amounts of marketing text around the mobile Web site, he says, content economy is a must – and this often presents more of a challenge to many content writers than the act of delivering it does.

"Marketing people like to be long and verbose, and we've got to train them to be short and succinct, and to get the message across in a shorter number of words," laughs Norman. "On the Web, people don't read; they skim and scan. It all comes back to the content, and the audience."



Marching to their own GarageBand

It wasn't too long ago that university music degrees were mainly built around music theory and live performance. But with the ready availability of professional-level tools and many musicians' growing interest in the technology of music production, Edith Cowan University's Mike Eastman is one of the many music academics working to keep course offerings in the area as current as possible.

As course co-ordinator of contemporary music / creative music technology within the ECU-based Western Australian Academy of Performing Arts (WAAPA), Eastman's role is all about keeping up with the fast-changing world of music technology. Next year, the university will welcome the latest in a series of increasingly focused music courses, the Bachelor of Music (Contemporary), a four-year program that combines music performance with practical advice such as how bands behave, songwriting, music theory, copyright issues and, of course, music technology.

And music technology there is – scads of it. Supporting the new B. Mus. (Contemporary) stream – as well as related offerings such as the Bachelor of Creative Industries (Creative Music Technology) and Advanced Diploma of Music Production – is a wealth of Mac-based applications ranging from Sibelius, Cubase, Reason, and MaxMSP to GarageBand, Aurelia, Ableton Live, Logic 8 and ProTools. There's also an 18-track external recording rig, synthesisers, microphones, and other high-end production gear.

All are available to students, who use the tools in a variety of units ranging from sound recording techniques and sound mixing to production, surround sound production, and even organising studio musicians. The systems are spread across two computing labs – the first with 26 Mac G5 tower workstations, the second with 18 iMacs configured as MIDI workstations.

Students also have access to a bank of 20 Macbooks with the software preloaded, which are offered on overnight loan to students who wouldn't normally be able to afford such high-end applications themselves. In two years, says Eastman, the program "has been great. Incidents of the notebooks being damaged or stolen have been low, and the general student response is that they very much want to hand them back so they can use them again. They really seem to look after them."

With so much technology to hand, the music course has been able to refine its offerings to cater not only for natural musicians, but for people who are more interested in the production and technology side of the business.

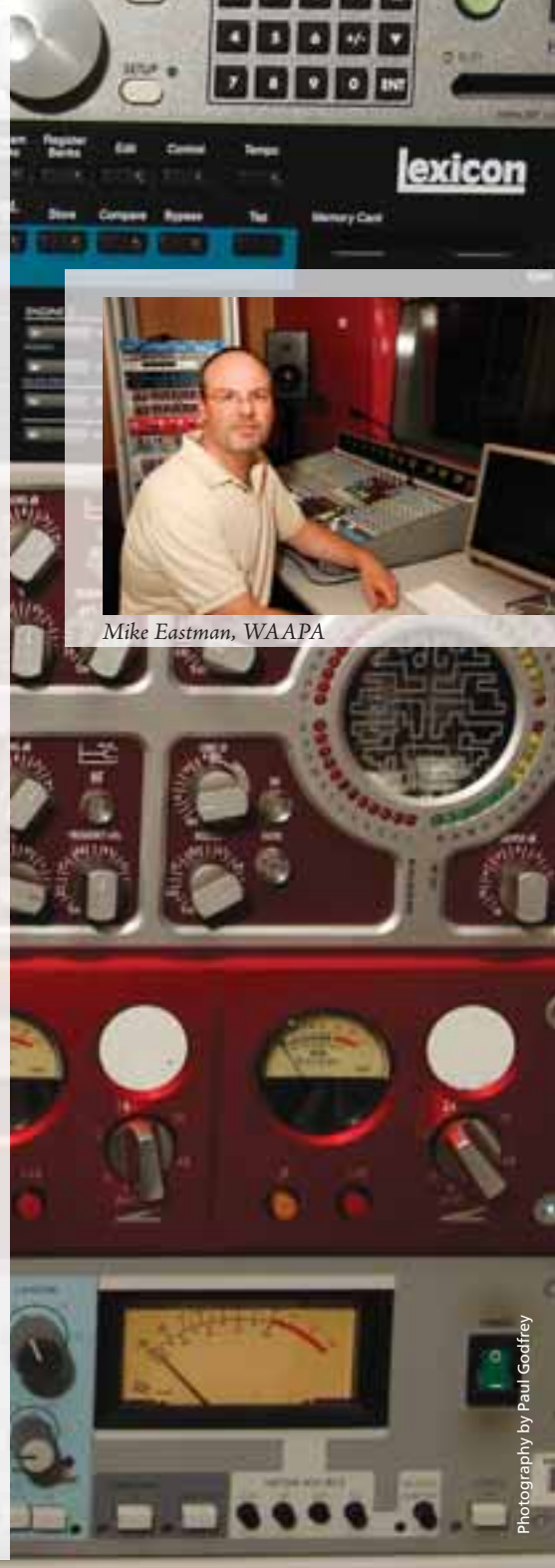
This is the realm of the nearly 30 WAAPA students pursuing the Creative Music Technology stream, also a new offering that "focus on enabling you to use technology to create new music," Eastman explains.

"If you don't know where middle C is on a piano on the way in, you won't know where it is on the way out. But it focuses on enabling you to use technology to create great music. Many courses focus on playing music, but we're also very interested in exploring new ways of allowing creative output and expression."

To keep the creative juices flowing, students are being encouraged to actively seek out new things to record – concerts, instrumental jams, jazz improvisation, orchestral performances, and so on. The focus will be on helping students adapt their recording techniques to a range of environments, then manipulating the audio using the digital tools to get the result they're looking for.

Eastman has also forged links with other programs – for example, the B. Mus. (Music Technology), which looks at related issues such as psychoacoustics. Other B. Mus. streams include jazz, classical, and composition, and even students in these more traditional programs are getting exposure to music recording and production.

"There's a lot of integration, and the programs offer students sensational opportunities to really think about what they want to do and be," he says. "There's something here that should suit almost anyone; it's an opportunity to really focus on your craft, and come out the other end and make a living doing what you love."



Mike Eastman, WAAPA

Read me a story, iMac

Many of us may see audio books as a convenient way to soak up the latest novels while sitting on the bus or driving in the car, but for many people with disabilities they are a lifeline for learning with no readily substitutable alternative.

Copyright issues aside, co-ordinating the reading, checking, and collation of audio books requires considerable manual work – making general-interest projects such as LibriVox (www.librivox.org) massively complex organisational efforts involving people from around the world.



Kieren Eaton and Iain Murray of Curtin University

Even with this effort, however, the resultant audio books – usually distributed in MP3 or the open-source OGG format – offer little more than the audio itself. Chapters are usually simulated through the use of multiple files, and there are no tools for searching, annotating, and extracting the text itself.

Enter Iain Murray, a lecturer in electrical and computer engineering at Western Australia's Curtin University who has spent over 20 years working on assisted learning technologies for the benefit of vision impaired and otherwise disabled people through the Curtin University Centre for Accessible Technology (CUCAT, at www.cucacat.org).

For this group of users, simply having an audio book available is not enough – especially if the book in question is a reference book rather than the linear fiction so popular with mainstream audio books. For this reason, Murray set about implementing DAISY – a global standard that provides a broad range of capabilities that allows audio books to be used in the same way as normal books (www.daisy.org).

For example, DAISY enables skipping to specific pages or chapters, searching through text, and speed and tone controls that provide more control over how content is played. "There's a lot of value in DAISY for people who have no other way of reading books," Murray says, "and for people like train and truck drivers, who are in situations where they need something to do but can't have anything distracting them."

Many online audio book efforts have turned to Project Gutenberg – the growing repository of copyright-free books (www.gutenberg.org) – for source materials, but relied on human readers to add the emotion and feeling that make narrative books so interesting. Murray, however, realised that this approach is not only limited by the interest and availability of readers, but is also unsuitable for reference books where the focus is on communicating information rather than emotive intonation.

Working with Greg Kearney, a developer based at Wyoming Medical Center in the US, Murray set about addressing this problem by developing a completely automated service that converts Project Gutenberg texts into full DAISY-compliant files – and relies on Mac OS X's built-in text-to-speech (TTS) capabilities to produce the audio.



Wyoming Medical Center-based developer Greg Kearney

"The traditional way of producing audio books is incredibly expensive, because you have to have someone sit there and read it, then edit, transfer and distribute it," he explains. "We're automating as much of the process as possible, which is terribly important because you don't want to be doing this manually if you get a large number of book requests."

Working through the detailed DAISY specification, the pair have developed a Mac OS X reader application (many DAISY users have had to rely on expensive hardware devices), and have used extensive scripting to develop a process that lets interested readers select a title from around 2500 available online through Project Gutenberg. If the title hasn't already been converted, the system feeds the text into the TTS engine and produces the necessary audio files, as well as XML and SMIL files containing all the information the DAISY reader needs to tie the audio and textual information together.

For now, tasks such as labelling headings are being handled manually to ensure accuracy, but over time Murray says the entire process will be automated – giving reading-impaired Web users access to complete DAISY versions of public-domain reference books within "a couple of hours. We may not have nice human voices, but we have some pretty good synthetic voices. We're focused on reference books because synthetic speech isn't all that nice for a novel."

The approach has attracted considerable interest from bodies such as the State Library of WA, which has identified 12,500 titles it would eventually like to add to the system. The Association for the Blind of Western Australia has flagged an additional 11,000 titles that will soon be added to the effort for conversion. Combined with other data sources, Murray says the project – known as the Talking Book Library of Western Australia, and accessible at www.cucacat.org/library – could eventually include more than 50,000 titles.

PUTTING THE (MULTI)



The promise of running both Windows and Mac OS X on Apple computers was an appealing curiosity from the moment Apple embraced Intel processors two years ago, but it is saving major amounts of time and management bother as Melbourne University simplifies its lecture theatre multimedia systems using dual-boot Mac minis.

Putting computers and big-screen projectors in lecture theatres became standard practice years ago, but many faculties found that they had to provide both Macs and Windows PCs to cater for the diversity of preferences amongst academics. Those systems are used for tasks such as showing videos, giving PowerPoint presentations, and do live demonstrations on the Internet.



With 27 small theatrettes and more than 70 lecture theatres, however, managing all those systems has required considerable effort from the technology management team. It was thus with considerable interest that the university's Information Services division kicked off a trial in which six theatrette systems would be replaced with dual-boot Mac minis.

"There were many people who wanted Macs in the lecture theatres," says Jon Peacocke, program manager for learning environments within the university's Information Services division. "In areas such as Education and Information Systems, it was absolutely critical that they be able to demonstrate information on a Mac environment."

The choice to use Mac minis in the lecture theatres was made because of their "flexibility and nice compact size," Peacocke explains. "The cost was appropriate, aesthetically they looked really good, and they delivered the sort of powerful processing environment that we wanted. We needed a device that was going to be really fast, and the Mac minis were able to deliver that."

After the successful trial, the program was expanded so that each of the university's 27 centrally-administered theatrettes have now replaced their Windows and Mac systems with a single dual-boot Mac mini. The systems have also been rolled

out to larger lecture theatres, although in many cases the Windows systems have been retained because the theatres offer dual projectors and need two video feeds to support them.

Each system is loaded with the Microsoft Office suite, NetOp School collaboration software, a variety of Web browsers, and other specialist software that might be required by lecturers. The dual-boot systems default to Windows XP, except in the larger theatres where they boot to Mac OS X.

The Mac minis have also been rolled out into many of the university's e-Learning Studios, smaller learning spaces with a number of tables that are used by students in groups during tutorials and other small-group instruction.

"By providing just a Mac mini with dual boot, it means we reduce our support overheads," Peacocke explains. "We've only got one device to maintain, but it still provides a lot of flexibility for our academic users."

This translates into direct cost savings – an estimated 50 fewer units that didn't have to be purchased, for example. And while there was a large upfront cost, Peacocke says the savings on support and system deduplication will mean the minis will pay for themselves well within three years.

There were some issues with staff acceptance, but the Information Systems team worked hard to address that issue from the beginning of the project.

"We produced a really good user guide and have staff available for academic colleagues who need assistance," Peacocke explains. "Each of the spaces is equipped with a telephone line so staff can call for assistance if they need it. We ran training sessions with some departments, and worked very closely with our IT colleagues in nearby schools to make sure they were aware of what we were doing."

Because Peacocke's team only administers lecture theatres in certain departments, word has quickly gotten out about the dual-boot trial – and many other departments are dropping in to get some pointers on the transition.



Apple Bytes



More solid, more swish

If September was all about the iPod, October was all about the MacBook. Apple's latest launch saw the company refresh its entire MacBook line, with features including faster graphics chips and a new manufacturing process that Apple says has resulted in "thinner, more durable and incredibly beautiful designs". And, besides, they are cheaper than the old models.

Leading the charge were the 13-inch MacBook and 15-inch MacBook Pro, both of which are now made from a single block of aluminium – eliminating the need for seams and mechanisms necessary to keep previously separate shell components tightly together. Both also include glass multi-touch trackpads that provide a larger tracking area and enable more complicated multi-touch gestures including pinch, rotate, swipe, Exposé or application switching.

Perhaps the most-awaited feature, however, was the graphics boost for the new machines, which feature the NVIDIA GeForce 9400M graphics processor. With 16 parallel processing cores, the 9400M is claimed to boost 3D graphics performance by up to five times over previous models – and it will definitely provide a considerable amount of grunt to support the OpenGL features of the upcoming Snow Leopard (Mac OS X 10.6).

The new MacBooks also include LED backlit displays that reduce power consumption and, with the elimination of the mercury found in fluorescent backlights, support Apple's claims that the new notebooks are its most environmentally sound yet; claimed Energy Star 4.0, EPEAT Gold and RoHS compliance testify to this.

Apple also updated – but did not change the design of – its MacBook Air, 17-inch MacBook Luggable, and popular entry-level white MacBook. Specifications for the updated MacBook family are as follows:

13.3 inch MacBook	13.3 inch white MacBook	15.4 inch MacBook Pro	17 inch MacBook Pro	MacBook Air
Display: 1280x800; RAM: 2GB Weight: 2kg; Thickness: 24mm 2.0GHz CPU/160GB HD: \$2099 2.4GHz CPU/250GB HD: \$2549	2.1 GHz CPU/120GB HD: \$1649	Display: 1440x900; RAM: 2GB Weight: 2.49kg; Thickness: 24mm 2.4GHz CPU/250GB HD: \$3199 2.53GHz CPU/320GB HD: \$3999	Display: 1920x1200; RAM: 4GB 2.5GHz CPU/320GB HD: \$4499 Optional 128GB SSD drive	Display: 1280x800; RAM: 2GB Weight: 1.36kg; Thickness: 19mm 1.6GHz CPU/120GB HD: \$2899 1.86GHz CPU/128GB SSD: \$3999

The view from 24 inches



LEDs are, apparently, the big new thing for displays, since they use less power and hazardous materials than earlier backlighting technology. Little wonder that Apple took its latest launch as an opportunity to put the technology into a standalone monitor – its 24-inch LED Cinema Display.

Providing 1920x1200 resolution with a swivelling aluminium stand and built-in iSight video camera, mic and speakers, the display also incorporates three self-powered USB 2.0 ports and a built-in MagSafe charger so notebook users don't have to keep pulling their own cable out of the bag.

The \$1499 display also uses a new interface plug, calling on the new Mini DisplayPort standard to produce a plug that's just 10% as large as a full DVI connector; these ports are built into the new MacBooks.

App Store downloads top 200 million in first 100 days

It's only been a few months since the iPhone 3G was launched, but users of the new phone – and the iPod touch – have already downloaded more than 200 million applications from the service, Apple announced with its strong financial results in late October. That continues a string of successes for the App Store, which had passed the 10 million mark after its first two days of operation, 100 million just 60 days after launch, and surpassed 200 million around 100 days after launch – a rate of around 2 million applications per day.

Even more hands-on than before



The iPod touch has gained a following for its rich interface, support for downloadable applications and robust Web browsing experience – so it was only natural that the second-generation touch would take the concept even further by keeping the device in lockstep with the improvements of the iPhone 3G launched in June.

Among the improvements are an external volume switch, a reduction in size and weight over the first-generation model, a more rounded and streamlined shape, and a built-in speaker that lets you share your music with – or inflict it upon – those around you. The new iPod touch also includes built-in support for the Nike+iPod fitness companion, up to 32GB of storage, and works seamlessly with the new Genius feature announced with the launch of iTunes 8.

Although it's still optimised for the usual assortment of videos and music, with the September launch of the iPod touch 2G, Apple has also been pushing the device as a gaming platform. Big, official launches of games such as Spore Origins and Scrabble reinforced this idea, and a slew of independent game releases since the launch confirms there is great interest in the touch as a motion-sensitive gaming platform. Third-party add-ons will soon give the touch traditional joypad and button controls, further enhancing the gaming experience.

Back to the nano future



What do you get when you combine the video-capable screen of the iPod nano 3G with the chocolate bar shape of the iPod nano 2G? You get the iPod nano 4G, the latest in Apple's line of musical companions.

In recognition of peoples' love of thin, long nanos, Apple turned the 3G unit's 2-inch video widescreen on its side, then reclaimed the aluminium body of the 2G units and added an accelerometer so the unit can respond when it's turned on its side.

This hastened the introduction of a new form of shuffling: shaking the unit roughly causes it to skip to the next song, or choose a completely new one (if you're a jogger, flip the hold switch to make sure this feature doesn't accidentally drive you crazy). Rotate the unit more gently from portrait to landscape mode, and it switches between traditional upright menu mode and cover flow view.

The accelerometer isn't just for impressing your friends, though: the new iPod includes a number of accelerometer-friendly games, like the old ball bearing-in-a-rotating-table-maze, and more are available for download from the iTunes Store. Claimed battery life is 24 hours of music or four hours of video on a single charge.

Oh, and they come in lots of pretty colours.



Your own personal music Genius

With so many point and point updates, you always know there's something good coming when Apple goes to a completely new version.

In Apple's September launch, that 'something' turned out to be the Genius feature, a new addition to the media management software that spearheaded a broad range of cosmetic and functional changes.

If you aren't already using it, Genius is a software feature that scans your music library and makes recommendations as to other songs you might like. Apple has been promoting it like magic, but what it's really doing is extrapolating its recommendations by analysing the strengths of buying and browsing relationships within past purchases in the iTunes Store. It also factors in anonymised information it collects from the music collections of users around the world.

The net result is to have a music advisor that will recommend new music, make new playlists incorporating it, and help you buy it online with a few clicks. The new iPod range and iPhone also facilitate creation of Genius playlists on the go, and the Genius Sidebar feature adds a column in iTunes that continually refines its recommendations based on the music you select.

Reflecting the constant effort to cram more content into the iTunes window, iTunes 8 introduces a new tiled Grid View for artist, album and song views, and takes a similar approach to organising podcasts, videos and audio books. There's also support for VoiceOver (Mac OS X) and Windows-Eyes (Windows) screen reader software, and a totally new high-resolution visualiser after Apple bought The Barbarian Group's popular Magnetosphere plug-in.

The iTunes 8 launch was also marked with some fanfare in the US, where high-definition TV shows became available for \$US2.99 each; that offering has not been replicated in Australia yet, although Australian customers are able to get high-definition movies through the iTunes Store.

Creation of a classic

It's looking a bit big and dated compared with its aluminium-and-glass cousins, but the iPod classic also got an update, consolidating the previous two models into a single model with 120GB of storage and the slimline design you know and love.

It may not have the accelerometer and shiny appeal of the other models, but the high hard drive-based capacity of the iPod classic means it is still the device of choice for those who rely heavily on using their iPod for image capture, massive music collections, large volumes of video, or other large files.



Meeting of minds

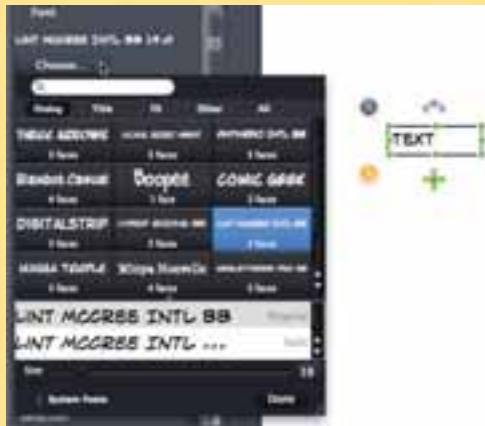
Conferences, education, training – and learning, in all its forms – are a major focus of the Apple University Consortium, which is what made the inaugural /dev/world conference in Melbourne even more special.

As the culmination of months of planning and tireless work by organisers Andrew Jeffrey, Daniel Saffioti and Tony Gray, /dev/world built on the unique relationship between Apple Australia and the AUC to produce a two-day conference that brought together more than 100 developers – students, staff, and professionals – from every corner of Australia.

There were even a half-dozen year 11 and 12 students, and a teacher from Western Australia, who were invited to familiarise them with the AUC and, hopefully, to build long-term ties that they will take into their university careers and beyond.

All converged on Melbourne's Rydges Hotel for six sessions, of three streams each, that covered a broad range of development topics. Topics covered, for example, included introductions to Xcode, Dashcode, Objective C, Core Animation, Quartz Composer, WebObjects, Xgrid, and Ruby on Rails.

There were intensive technical sessions on Cocoa programming with Python, embedding OpenGL in Cocoa, scripting beyond AppleScript, and the iPhone SDK (restricted to developers who had signed the iPhone NDA of course).



plasq founders Cris Pearson and Keith Lang highlighted the importance of thinking differently about common UI elements.”

And there were process-focused sessions on critical areas such as designing good user interfaces, polishing Cocoa applications, performance analysis with instruments, and the business side of development.

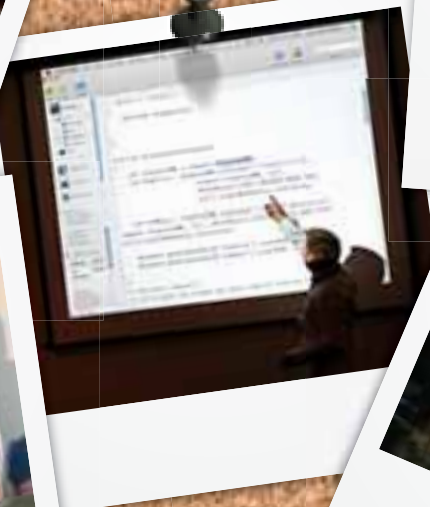
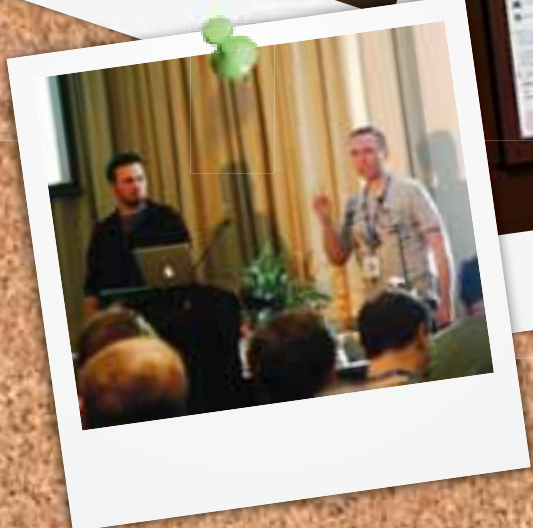
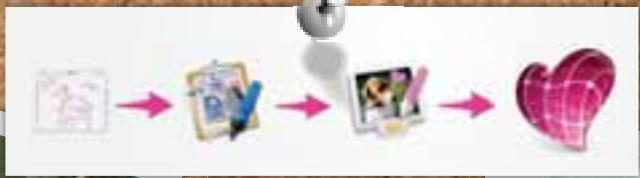
And, of course, there were keynotes – two of them, from developers who shared their secrets of success with an eager and attentive crowd. Andrew Sorensen, author of the Impromptu programming environment (<http://impromptu.moso.com.au>), shared his perspective on Live coding – the performance practice music-generating software is used in real time as part of a live performance.

Opening the conference were Cris Pearson and Keith Lang of plasq, who shared their experiences following up their smash success with the Comic Life application. The pair talked attendees through their experiences developing Skitch, a graphics capture and manipulation application that has been designed for simplicity but has been through numerous iterations to reach its current, widely acclaimed state.

Among their tips to developers:

- Don't be scared to change software
- Resist the urge to add 3D and other fancy features just because they're available
- Know when to stick with convention. You may not be fans of the save dialogue, but users expect things to work a certain way and struggle when they're changed. "It's frustrating because sometimes you know what's wrong but you can't make a huge change," said Lang.
- Be careful with palettes and other elements that can confuse the user interface and disappear in strange ways
- Experiment. "Over time we added nicer graphics and features, then moved on to new versions," Pearson said. "We used temporary graphics; it wasn't pretty, but it enabled us to go through lots of variations to the interface quickly. Because when it's something that you use and care about, you really care about how it looks and works."

By the end of the second day, the inaugural /dev/world had run its course, with considerable success. New friendships had been made, new knowledge gathered, new projects kicked off. Planning is already underway for /dev/world 2009, which will be held together with the AUC Conference 2009 at the National Convention Centre in Canberra next 27-30 September. We look forward to seeing you there!



Schooling the iPhone

By Martin Cooper, Jeremy Pagram and Alistair Campbell

Mobile phones are not particularly welcome in Australian schools. Apart from students being distracted by calls and text messaging, there is the fear that the phones may be used for bullying or cheating in tests. Hence most schools require students to turn off mobile phones or not bring them to school at all.

This is understandable, especially since the small screen and limited capabilities of most mobile phones does not make them educationally very useful. However, with the advent of the 3G phones such as the iPhone 3G and its larger screen and increased functionality, the above situation may be about to change. In fact, one may consider the iPhone as a computer that just happens to be able to make phone calls, as opposed to seeing it simply as a mobile phone.

It seems clear that in the near future there will be many new educational applications appearing for the iPhone. Combine this with its small form factor and ability to access the web and its introduction into the modern classroom appears to be inevitable.

The Centre for Schooling and Learning Technologies (CSaLT) at Edith Cowan University in Western Australia is investigating a potential use for the iPhone in education: digital assessment of practical performance.

Examples of practical performance include speaking in another language, building a model, carrying out a sporting skill, drawing a picture, etc. These examples of practical performance can be captured as audio, video, and graphical files and stored for digital access by markers or reviewers.

The assessment of practical performance is not new, as oral and laboratory examinations have been used in European schools and universities

for over a century. In many industries, such as aviation and medicine, performance-based assessment approaches are used and Australian schools already collect portfolios of student work as evidence of a student's practical ability.

So why use the iPhone in the assessment of practical performance? The answer comes from examining current assessment methods in subjects where a student's practical performance is of importance. Typically in these courses students are engaged in rich and authentic (realistic) types of activities such as designing, producing, and evaluating products on a day-to-day basis during class time, yet when the time comes for examinations the students are often assessed with pen and paper tests.

Pen and paper tests have the advantage of being cheap and easy to administer and effective in assessing knowledge outcomes, but they lack the power to truly examine practical performance. Imagine a different type of 'examination' scenario, one where students are engaged in a busy classroom and are utilising the iPhone to gather data (text, audio, photos, video) showcasing their practical performance. This assessment data can then be uploaded automatically to an internet repository for marking by assessors.

The above scenario means that students can be assessed in a context that is similar to their normal classroom activities, and this has one not-so-obvious benefit: it is well known that assessment tends to drive classroom practice. That is, pen and paper examinations will generate more pen and paper activities in classrooms because teachers naturally want their students to perform well on examinations.

If we can make examinations into the types of activities that stimulate higher-order thinking and problem solving within a practical context, these types of activities will become more commonplace in classrooms, which should make education in general more enjoyable for students in these subjects. The iPhone is ideal because it is very powerful and yet unobtrusive in the practical classroom, where there may not be room for traditional desktops or even laptop computers.

The technical issues associated with the CSaLT project are being addressed by using Filemaker Pro to design and deliver the assessment tasks over the web as well as to build the online repository. Students will receive instructions via the iPhone, and they will record evidence of their progress at various times in the assessment task using software and tools on the phone. Timing of tasks can also be achieved through this process.

The structure this method of assessment provides will ensure that the necessary reliability, validity, and comparability required of any examination procedure will be achieved. In terms of research, the results are being examined under four categories:

- Manageable: Is this assessment method do-able in a typical classroom?
- Technical: Can the software and tools on the iPhone be adapted for assessment purposes within course requirements?
- Functional: Does this method produce reliable and valid student results?
- Pedagogical: Does this form of assessment with the iPhone support and enhance students' learning experiences?

It is very exciting that tools such as the iPhone are now available for use in education. The question is whether schools will be open-minded enough to allow these new technologies into classrooms, and it is up to researchers to facilitate this by showing their potential.



Mapping the grand tour



You may walk in familiar surrounds every day, but how often do you take the time to look up and consider the relationships between the people and spaces around you? Exploring this question was a theme of Peripato Telematikos, a performance art project that uses mobile phones to capture images as participants wander around an area.

The brainchild of Victoria University School of Creative Industries lecturer Greg Giannis, the project was originally conceptualised as a way of pulling together his interests in performance, subjective mapping, mobile communications technologies, and experimental interface design. "Having worked with the Internet in past art projects, I wanted to increase the potential for participation through using mobile devices, which have a significantly larger user base," Giannis explains.

"The goal of the project is to initiate live, subjective mappings, that are not fixed representations of place, by collectives and by individuals engaged in staged walks. I am interested in extending the reach of performances that occur over large geographical distances (eg walking performances) by using devices that can distribute content during the event. My emphasis is on generating content with the mobile phone rather than using it to display content."

To bring his project to life, Giannis – a long-time Mac developer – used Java to code a system based on PHP, the MySQL database, and the nowSMS gateway.

Participants in the projects are each given mobile phones, or use their own, then spend an hour wandering an area taking photos of interesting things then submitting the photos to the central system using MMS. The photos are then mapped and made available via sites such as www.peripato.net, which provides a front-end to the Java system.

Giannis has repeated the project at a number of venues – including the AUC's CreateWorld, a gallery setting in Townsville, the Adelaide Fringe Festival, and ANAT's Portable Worlds II touring exhibition, with significantly different results.

"The collective mappings have been most successful when accompanied by a workshop or in other controlled situations," says Giannis. "In a workshop, I have developed simple walking strategies with the participants, the walkers have generated content during the walks and, where there has been interest and time, the participants themselves have shaped the final organisation of their content. But in a gallery setting, where the work is simply exhibited, participation has been less successful."

Feedback from participants has been strongly positive, with many participants saying that the project had helped empower them by letting them control their experience and getting a better sense of their place within the community.

"One of the best outcomes was to work with an artist like Greg, who really facilitated this project in a very modest manner," one participant said. "He let the participants run the project and this was empowering for them. This project really highlighted our sense of community and belonging to this place; we were literally in the picture. There was the realisation that the technology could be used to bring people together, instead of intimidating them."

Through an ongoing process of development and refinement, Giannis continues to enhance the application and is considering adding capabilities such as sound mapping and decentralisation of the mapping; projects like this are most effective with the collection of more and more data.

To this end, Giannis has been working to enable third parties to conduct their own mappings – designing the application "in such a way as to allow full control of the mapping process with minimal intervention from me," he explains.



Academic Ramblings: Searching for truth in research

By Mark McMahon, Edith Cowan University

We are all searching for 'The Truth'. The problem is we can't agree what Truth actually is. Some think in terms of absolutes, others emphasise subjective experience. Research is prone to some of the same arguments.

As universities we define ourselves by our capacity to progress our understanding of the world. It all sounds very noble until you realise that reputation and funding are completely dependent on it. The question then arises as to how we conduct research. How do we go about defining 'good' or 'effective' research?

The Australian Research Council has an idea of what good research is. They decide what to fund through the National Competitive Grants Program. But even then, the yardstick changes.

Every new government brings with it a new definition of excellence in research in Australia. The current 'ERA' initiative is now trying to do just that, for the umpteenth time, trying to come to terms with what it means within eight distinct discipline clusters.

And that is the problem. In the competition for funds and profile, each discipline is trying to position itself as the most important.

In the blue corner we have the biological and physical sciences. These guys have Truth on their side. They know that because they've proven it with p being less than 0.05. Their approach is solid if a bit predictable. The strategy is set in advance and their method is easy to copy. But they have a mean double blind manoeuvre.

In the red corner we have the social researchers. Less cool and calculating, but equally devastating when cornered and can respond to the other's tactics.

Each has its own supporters, cheering and jeering from the ropes. Benjamin Disraeli screams, 'Lies, damned lies and statistics' at the empiricists. Ernest Rutherford waves his blue water bottle, spit bucket and towel, sneering, 'That which is not physics is stamp collecting.'

It is now way past the 15th round in an unwinnable battle. Each are equal yet different. And as they trade blows, the bloodiest contender is the game itself.

And in a sense it is a game, with the ultimate goal being impact. All of the great inventions of the 20th century started out with someone asking a question and daring to find the answer to it.

Mapping the human genome was a major breakthrough in scientific research, but it was built not only off the work of other scientists, but from the historical, educational and economic research that underpinned the society that discovered it. Even Einstein went to school.

And now that we know the basic building blocks of life, does that mean we understand it? It is up to the ethicists, theologians and philosophers now to unravel the mystery.

And what about Creativity? A traditional measure of effective research is citations in recognised journals and books. We can count these. They give us the calm certainty of a number, but say nothing of the quality of what is produced.

Creativity is one of the most difficult areas in which to measure impact. A painting can change the world, but in the current definition it would not be considered research. In universities we have the accompanying exegesis to articulate the theoretical basis and generalised benefits that be derived from it.

So impact comes in many forms. A published journal article is one form of impact but consider this column. More people are likely to read this than any paper of mine hidden away in a dusty library shelf or on an anonymous CD of conference proceedings.

This is probably a more interesting read too.

Each form of research has its strengths and weaknesses. Check out the Ig Nobel Prize to see how scientific research can be abused. One of last year's winners discovered that hamsters recover from jet lag more quickly when given Viagra (<http://improbable.com/ig/winners/>).

The scientists among us might want to visit the Post Modernism Generator (www.elsewhere.org/pomo/). There, you can create your own disturbingly credible postmodern critique on a topic of your choice. Guaranteed to impress those opposingly gendered cultural theorists at parties.

Another measure of effective research is originality. Both of the above examples are original, but does that make them good? Every study and every essay, whether they replicate or analyse what has come before has a place. Each is a brick in the wall of our understanding of the world.

Clinical/empirical, social, critical, and creative – every form of research has its place. Rather than being opponents, they are the worlds greatest tag team. Kind of like an academic justice league – upholders of the spirit of inquiry, and seekers of Truth in whatever forms it presents itself.

Now hand me the Viagra – and, while you're at it, a copy of Barthes' *Mythologies*. I have a plane to catch, and you never know who will be sitting next to you.

Tips & Tricks: Interesting iPhone apps

By Carrie Osborne, Griffith University

One of the best things about the iPhone (and iPod touch) is the huge range of applications that you can put on it.

You can choose from hundreds of apps to make your iPhone as useful and as fun as you want it to be. Just like songs and videos on iTunes, you can select which apps you want to put on your iPhone from your collection. If you're out and about, you can install an app directly on your iPhone and it will get copied onto your computer when you next sync. You can install apps through the iTunes store, or you can have a quick look at the top apps at www.apple.com/au/iphone/appstore/



Eventful (Eventful, Inc)

- Category: Social Networking
- Price: Free
- For the party animal
- Use this app to find, create and share events - see when your favourite bands are coming to town, check out what's happening at your local hot spots and share with your friends.



Evernote (Evernote)

- Category: Productivity
- Price: Free
- For the juggler
- Remember everything in your busy life with on-the-go text, photo and voice notes, which you can sync with the web version and desktop client. Perfect for making note of those great ideas you seem to get at inappropriate times.



gFlash+ (gWhiz, LLC)

- Category: Education
- Price: Free
- For the wannabe trivia buff
- Learn while you are out and about with flashcards - create your own or download existing ones.



Graphing Calculator (Gabor Nagy)

- Category: Education
- Price: Free
- For the maths geek
- This high resolution 2D function plotter will impress with it's good interface and solid functionality.



Spend Lite (Adamcode.com)

- Category: Finance
- Price: Free
- For the domestic treasurer
- Create budgets, then easily enter and track your spending. You can quickly view how much cash you have left in each category.



Air Sharing (Avatron Software, Inc.)

- Category: Productivity
- Price: \$8.99
- For the data traveller
- With this app, you can mount your iPhone on computers as a wireless drive and transfer data back and forth - a great alternative to the USB stick.



Wikipanion (Robert Chin)

- Category: Reference
- Price: Free
- For the wiki junkie
- A fast and easy way to search, display and read Wikipedia entries while you're on the go - handy for settling pub arguments too.



BOMRadar (Bureau of Meteorology)

- Category: Weather
- Price: Free
- For the casual meteorologist
- This app provides easy access to live Australian radar maps, so you can see if you should pack your umbrella.



Mocha VNC Lite (MochaSoft)

- Category: Business
- Price: Free
- For the control freak
- Use this app to control your computer remotely from your iPhone - good for running small tasks or checking up on something.



Shazam (Shazam Entertainment)

- Category: Music
- Price: Free
- For the music nut
- Record a snippet of music while its playing on the radio, TV or even in movie with dialogue over it - and Shazam will tell you what it most likely is.



Facebook (Facebook.com)

- Category: Social Networking
- Price: Free
- For the socialite
- A cut-down version of the famous website, this app helps you stay connected with your facebook friends, photos and messages everywhere you go.



Remote (Apple)

- Category: Entertainment
- Price: Free
- For the mobile DJ
- Use your iPhone to control the music on your computer or Apple TV from anywhere in your house (using wi-fi).



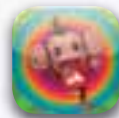
Local Picks by TripAdvisor (TripAdvisor LLC)

- Category: Travel
- Price: Free
- For the foodie
- Find the best places to eat in your proximity - whether you are in your home town or if you are traveling.



iPint (Beattie McGuinness Bungay)

- Category: Games
- Price: Free
- For the show pony
- An easy way to show off the accelerometer in your iPhone - the beer in the frosty glass pours out as you tilt it. Also included is a funky bar game.



Super Monkey Ball (Sega)

- Category: Games
- Price: \$12.99
- For the young at heart
- Tilt your iPhone and roll the cute monkey in a ball through different stages and mazes - trying not to fall off the edge.



English Dictionary & Thesaurus (WordWeb)

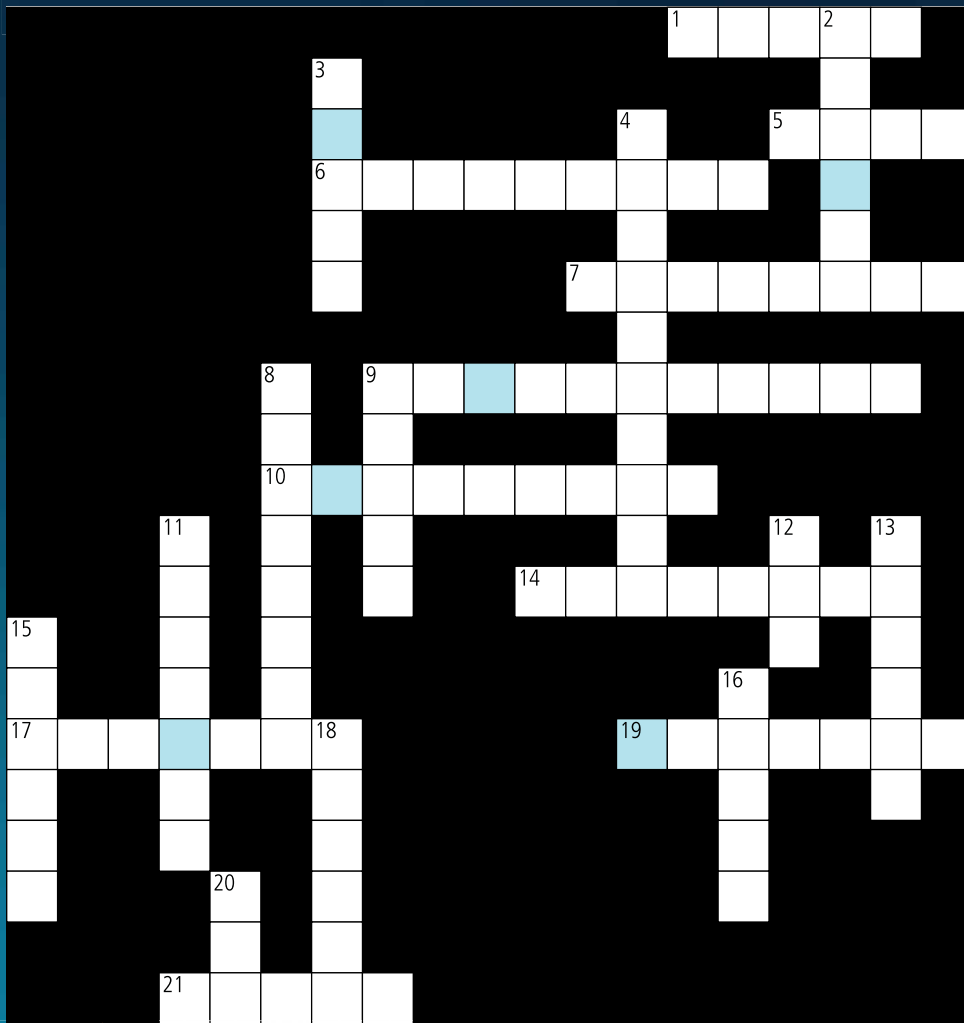
- Category: Reference
- Price: \$5.99
- For the wordsmith
- An Australian Dictionary & Thesaurus - offering detailed definitions, synonyms, derived words and examples.

The Joy of Tech™

by Nitrozac & Snaggy



CrossWORD Competition



Across

- 1 Eastman works here (p7)
- 5 Subject of February AUC training (p4)
- 6 Body of new Macbooks made of this (p10)
- 7 Number of tracks in recording rig (p7)
- 9 Monash overseas campus is here (p6)
- 10 Cross-platform development tool (p4)
- 14 Host city of 2009 AUC conference (p5)
- 17 One of three AUC conference themes (p5)
- 19 Brainchild behind Peripato Telematikos (p15)
- 21 Name of iPhone VNC client (p17)

Down

- 2 Last option to reach her (p18)
- 3 ECU centre exploring iPhone uses (p14)
- 4 iPhone Wikipedia search tool (p17)
- 8 One of the first big-name iPod touch games (p11)
- 9 Do this to change songs on new nano (p11)
- 11 US home of CUCAT collaborator (p8)
- 12 Initiative to define excellence (p16)
- 13 Installed in Melbourne Uni lecture theatres (p9)
- 15 Hotel where /dev/world held (12)
- 16 Technology for accessible books (p8)
- 18 plasq's newest app (p12)
- 20 How many million apps sold every day (p10)



For your chance to win an iPod nano, 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 or phrase.

Send this to: crossword@auc.edu.au Competition closes at 5pm on Friday 26th December 2008.

CONGRATULATIONS

Congratulations to Joseph Fulton of the University of Tasmania for winning an iPod Shuffle by correctly completing last issue's crossword to reveal the answer:

SNOW LEOPARD

An iPod shuffle is on its way.





Apple iPhone 3G

Plans / Accessories / Enterprise

Begin your Apple experience today
Onsite installation & staff discounts available



Laptops
from
\$1,569*



Heaps of accessories in-store



Authorised
Campus Reseller

Computers Now : www.compnow.com.au

sales@compnow.com.au

VIC - Chadstone	03 9568 8655	VIC - RMIT On-campus*	03 9654 8111
VIC - Doncaster	03 9684 3688	VIC - South Melbourne	03 9684 3600
VIC - Geelong	03 5223 2021	VIC - South Yarra	03 9824 2786
VIC - Malvern On-campus*	03 9508 2600	NSW - Crows Nest	02 9951 7979
VIC - Monash On-campus*	03 9684 3655	NSW - UNSW On-campus	02 9385 2746

*Special student & teacher discounts available, contact us for eligibility details & pricing.

Prices subject to change. Images for illustrative purposes only.E&OE



iPod trade-ins, repairs & batteries available.

Apple Platinum Service Centre