

# NeSC News

Issue 63 September/October 2008

www.nesc.ac.uk



## The Logic of Insecurity

By Iain Coleman

Security is for losers. At least, firms that put in the effort to create secure systems will lose out in the marketplace to firms that don't bother – and when market dominance comes from being first, this is fatal.

That's the remorseless logic of IT security, as described by Ross Anderson, Professor of Security Engineering at Cambridge University, in his keynote presentation at this year's All Hands meeting in Edinburgh. It's easier to develop applications for an insecure operating system, for example, which means that system will more quickly accumulate an attractive suite of applications that persuades customers to invest in it. Once they've done so, they don't want to pay the cost of switching to another system, and the fact that this system has more users makes it attractive to other customers – the network effect causes sales to snowball. Meanwhile, the poor schmucks who thought they'd get rich by building a secure, reliable system get left in the dust.

Having dominated the market, you can then worry about retrofitting security to your system. That's never going to be as effective as building security in from the start, but it's the way to get ahead in business. And that's where we are now.

And as if that wasn't depressing enough, our attitudes to security are steeped in selfishness and inconsistency. Distributed Denial of Service attacks are made possible because, while people will pay to secure their own computers, they are less willing to pay to secure someone else's. Our attitudes to privacy change with context: the same information we jealously guard in one situation we will give away freely



Ross Anderson

in another, and reassurances about security make us less, not more, likely to reveal our personal data.

It's too easy to simply blame the end user, but lecturing them about bad security habits doesn't work. Most products simply don't work terribly well, with the result that people get used to keeping on clicking "OK" until the dialog boxes go away and they can get on with their work. It's an example of learned helplessness. No wonder users become vulnerable to attacks that require them to click on things they don't understand – it's what their software has trained them to do.

But if economics and psychology are part of the problem, they can also be part of the solution. Governments and security vendors would have companies spend much more on security than they do at the moment, but measuring the return on investment of security suggests that companies in general are spending about the right amount.

The problem is that big companies are spending too much, and small companies are spending too little. There's a psychological explanation for this. Big companies have security managers, who are risk-averse by nature. In small companies, decisions on security will generally be taken by directors – and these people only got to be company directors by being the risk-taking type.

So, many of our security problems are simply due to human beings behaving rationally, given their environment and incentives. Solving them is going to be a matter not just of analysing systems to determine what methods will be most successful, but of achieving a longer-term social and economic viewpoint. There's no use railing against companies for behaving in the only way that makes them money, but a sound cost-benefit analysis of security requirements can help ensure that security problems are adequately contained, if not ever fully eliminated.

# How to Read a Million Books

By *Iain Coleman*

Go into your nearest university library, pick the first book off the first shelf you come to, and start reading. When you've finished, start on the book beside it. And so on. How far into the library would you get?

If you can average a book a day, then you might manage 25,000 volumes before you expire, ancient and withered, somewhere between Campanology and Cowbells. That's just one quarter of one percent of the Harvard Library's ten million books. Or what if you just try to read ten slim volumes of poetry in ten different languages? That alone could constitute a lifetime's work.

In his keynote presentation at this year's All Hands meeting, Greg Crane, Professor of Classics at Tufts University, Massachusetts, looked forward to a time when the e-Scholarship tools that are now emerging become the foundation of a new way of studying the humanities – and of finding out what it is to be human.

Our species has accumulated knowledge on a scale that defies individual scholarship and manual analysis. Which is why scholars in the humanities are increasingly looking to e-Science for tools to help them come to grips with all this information – tools that promise to revolutionise the most ancient academic disciplines of them all.

Take an example: the influence of Greek philosophy on Islamic thought. It's not as obscure as it sounds. The Ayatollah Khomeini created the Islamic state of Iran as his own personal interpretation of Plato's Republic, making him arguably the most important classicist of the twentieth century. However, making a comprehensive academic study of the subject is beyond the present capacity of scholars. There is just too much content, in too many languages. Faced with these constraints, scholars have trained themselves not to think about such grand problems.

That can now change. Machine translation tuned to particular disciplines can make the core data about the Greco-Roman world accessible in multiple languages including Arabic and Chinese. Automated similarity detection can unearth all the places where Plato, say, is quoted, not just in the Greek corpus, but in many different languages and literary cultures. It may soon be possible to go further, and automatically characterise the context in which the words are quoted.

This would open up the prospect of tracing how ideas, concepts, thoughts, propagate through culture in all sorts of ways with all sorts of influences. The cultural consequences of Achilles, the Holy Trinity or the East India Company could be traced by machines through millions of books in ways that no scholar could ever manage unaided.

But there is a price to pay: such an automated process is inherently probabilistic. This is a new and often difficult thing for scholars to adjust to. The traditional practice of the lone scholar closely reading and analysing a group of texts may give way to a

machine-based approach that trades off precision for range.

The next step is books that talk back. Plato complained that, while writing may present the words of great thinkers, they are dead: the books cannot answer your questions. Scholars can now envisage creating dynamic knowledge bases that they can interact with: books you can question, and books that talk to one another. It's a substantial task. Creating machine actionable reference works that can be customised and personalised, adapted on the fly for language, culture and purpose, involves rethinking all the fundamental document types. It also means new types of e-Scholarship to take advantage of this revolution, and new kinds of training for young researchers.

The prize is a more holistic view of languages and cultures than we have ever had before. Big Science can now be followed by Big Scholarship, and our intellectual and emotional world can begin to be mapped out as subtly and comprehensively as the natural world has been.

## Divided DCC United Again

The Digital Curation Centre (DCC) headquarters is hosted by the School of Informatics to foster collaboration, in particular with the University of Edinburgh Database Group (DBG) led by Peter Buneman.

Until last September both groups were on level 2 of Appleton Tower, but continued DBG growth squeezed over half of the DCC staff out onto level 8, leaving only Graeme Pow and Florance Kennedy to hold the fort. Around the same time DCC Director Chris Rusbridge was involved in a traffic accident, but despite the initial setback we quickly arranged temporary management -- initially Jeff Haywood, then Graham Pryor, and now occasionally Chris (much-recovered) again -- and continued where we left off.

In July this year, when the Database Group moved over to the Informatics Forum, the DCC team were reunited and you can now find us all together again in the Informatics Commercialisation Suite on Appleton Tower level 7 -- with a fabulous view to boot! Although we are now physically separate from the Database Group their new offices are just across the road, and their great meeting spaces should ensure our regular attendance at their famous DBG lab lunches. If you would like to see the DCC's new home and admire the view, contact Florance on 50 8391, or [F.Kennedy@ed.ac.uk](mailto:F.Kennedy@ed.ac.uk).

## Grid Computing Now! Webinar: Powering your business with cloud computing

The Grid Computing Now! KTN (Knowledge Transfer Network) invites you to its latest Webinar, on October 14, looking at the use of cloud computing by business users.

Cloud computing services provide computing power as a service. Instead of managing all your own IT and provisioning for peak loads, you can purchase the power you need, when you need it. The cloud service can grow as demand grows, without requiring a continuing outlay between peaks. Many smaller companies are already taking advantage of cloud computing to deliver more profitable business models.

The two speakers in this webinar will show how to exploit cloud computing to improve business performance. Ross Cooney of software developer and consultancy firm Rozmic Wireless uses cloud in his business and will explain the opportunities that cloud provides. Consultant Alan Williamson, the UK's first Java Champion, will give an overview of the different types of services available and how to avoid being locked-in to a single supplier.

You will be able to take part online from your desk by watching live video, viewing slides and asking questions through an interactive webpage. Please take the time to join in on October 14<sup>th</sup>! More details available here: [http://grid.globalwatchonline.com/epicentric\\_portal/site/GRID/events/eventsoverview/](http://grid.globalwatchonline.com/epicentric_portal/site/GRID/events/eventsoverview/)

## 5th International Conference on e-Social Science – Call for papers

24-26 June 09, Cologne.

We invite contributions from members of the social science, e-Infrastructure, cyberinfrastructure and e-Research communities with experience of, or interests in exploring, developing, and applying new methods, practices, and tools afforded by new infrastructure technologies - such as the Grid and Web 2.0 - in order to further social science research, and studying issues impacting on the wider take-up of e-Research.

Submission categories include: full and short papers, posters, demos, workshops, tutorials and panels. Topics of interest include, but are not restricted to, the following:

- Case studies of the application of e-Social Science methods to substantive social science research problems
- Case studies of e-Research, including benefits and problems in collaboration across organisational, disciplinary and geographical boundaries
- Case studies of 'Open Access Science', social networking and 'Science 2.0'
- Best practice examples of social research data infrastructure, including virtual distributed databases, open access repositories, self-archiving
- Advances in tools and services for data discovery, harmonization, integration, management, annotation, curation and sharing
- Challenges of exploiting new sources of administrative, transactional and observational data, including security, legal and ethical issues in the use of personal and sensitive data
- Advances in analytical tools and techniques for quantitative and qualitative social science, including statistical modelling and simulation, data mining, text mining, content analysis, socio-linguistic analysis, social network analysis, data visualisation
- Case studies of collaborative research environments, including user engagement, development and use
- User experiences of e-Research infrastructure, services and tools
- Factors influencing the adoption of e-Research, including technical standards, user engagement and outreach, training, sustainability of digital artefacts, IPR and ethics
- New methods, metrics and tools for measuring the adoption and impact of e-Research and for informing policy-making
- The evolving research infrastructure technology roadmap, including grids, cloud computing and web 2.0
- National e-Infrastructure development programmes, international cooperation in e-Infrastructure development

Authors are requested to submit an abstract of approximately 1000 words, while workshop, tutorial and panel organisers are requested to submit a one page outline of the topic, format, likely audience, special requirements.

For full submission details and more information, please visit <http://www.ncess.ac.uk/conference-09/>



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## NGS Innovation Forum '08

Make sure you mark the 4th – 5th of November in your diary now as those are the dates of the NGS Innovation Forum '08. It will be held at the Manchester Museum of Science and Industry (MoSI), an appropriate setting as the museum contains the only working replica of “Baby”- the first stored-program computer.

The free two day event will showcase the achievements of the NGS over the last 4 years as well as looking ahead to the future of the NGS. Presentations will include existing NGS users demonstrating how the NGS has become a powerful research tool in their area as well as presentations on the novel technologies already available on the NGS along with those that are coming soon.



Manchester Museum of Science and Industry

NGS staff will be on hand throughout the event to speak to you about how the NGS could aid your research, how to get started with the NGS and, for existing users, offering up to the minute advice on optimising your jobs on the NGS. We are pleased to announce that Daniel Katz, TeraGrid GIG (Grid Infrastructure Group) Director of Science, has agreed to speak at this event.

All NGS users and potential users are encouraged to attend as is anyone with an interest in research computing delivery on an institutional level. The event is free to attend but registration is required.

Full information about the event including registration forms and accommodation information can be found on the NGS website at [www.ngs.ac.uk/innovationforum](http://www.ngs.ac.uk/innovationforum). A Facebook event page is also available at <http://www.facebook.com/event.php?eid=68803925590>

### Advanced Distributed Services Summer School 2009

The NGS in conjunction with the Training, Outreach and Education (TOE) at NeSC, are pleased to announce the ADSSS summer school. This will take place on the 24th August - 4th September 2009. Further details will appear on the NGS website, newsletter and fortnightly news bulletin over the forthcoming months and registration will open in January 2009.

### NGS Roadshows

Have you thought about hosting a NGS roadshow at your institution? NGS staff will come to your institution and organise a series of presentations about the NGS and demonstrate how it can be of benefit to your researchers. Afterwards lunch will be provided by the NGS and people can obtain NGS certificates there and then whilst browsing the NGS exhibition stands.

If you are interested in hosting a roadshow at your institution then please contact [Gillian.sinclair@manchester.ac.uk](mailto:Gillian.sinclair@manchester.ac.uk).

Please note that your institution doesn't have to be part of the NGS to host a roadshow.

# Grid Computing Made Rapid

By Iain Coleman

Users, of course, are a problem. They want to use all kinds of distributed resources to do their science – data sets, analysis tools, you name it. Then, on top of that, they want a nice, familiar interface so they don't have to learn some new way of interacting with their computer. And, as if that wasn't enough, they don't want to wait a year or so for all this to be put together. They want it now.

Well, help is at hand in the form of Rapid, a new system for quickly and easily joining up disparate resources and creating a user interface. Created by Jano van Hemert and his team at the National e-Science Centre, Rapid enables developers to create web portal interfaces to grid computing infrastructures and high performance computing resources by simply creating a single XML configuration file that defines both the user interface and its control flow. Job description, submission and execution are handled automatically. Thus the user just sees an interface with a suitably familiar design, while the developer can readily create a new system without having to perform conventional programming.

Rapid has proved itself in action. The NanoCMOS project required a grid-enabled portal for engineers to run simulations for the development of nano-scale electronics. A prototype constructed in the usual way, with various grid software components assembled by programming and scripting, took fourteen months to develop. Rapid produced an equivalent system in just eight weeks.

This kind of saving in time and effort means quicker results, earlier publication and fewer resources used up in development. The Rapid team hope that their system will lead to broader uptake of grid and high performance computing across a wide range of research disciplines.

More information about the Rapid project can be found at <http://research.nesc.ac.uk/rapid>

## Dave Berry leaves NeSC

Dave Berry, formerly Deputy Director, Research and Operations of the National e-Science Centre, has left NeSC to become Head of Development Services within the University of Edinburgh Information Services Applications Division.

At Dave's leaving presentation, Malcolm Atkinson, e-Science envoy, spoke of his great enthusiasm and willingness to take on, and quickly become expert in, new subject areas and challenges since he joined NeSC in 2002.

Dave led the OGSA Data WG of the Open Grid Forum, which successfully produced the OGSA Data Architecture document in December 2007, and was Technical Lead on the Grid Computing Now! Knowledge Transfer Network, which is funded by the UK's Technology Strategy Board to encourage the adoption of grid and related technologies by industry and government.

Dave will also be well known to many for his success in organising national and international meetings, and facilitating networking amongst the e-Science community through the NeSC, ESCINET and more recently NIN network programmes.

We wish Dave continued success in his new role!



Dave Berry

## Technology Strategy Board Open Days

The Technology Strategy Board (TSB) will run two information days, in Birmingham and Bristol, to provide delegates with an opportunity to find out about the activities of Board and gain an understanding of the application process for Collaborative R&D Competitions, as well as find out about other Technology Strategy Board activities.

The Birmingham event, to be held on October 22, is now fully booked, but more places may become available. Places were also still available on the Bristol event, on November 5, at the time of going to press.

The Bristol event will open at 09:30 for a 10:00 start and will close at 16:30. A full agenda and venue details will be released shortly. Please see here for details and availability: <http://www.technologyprogramme.org.uk/site/events/default.cfm>

# IDCC2008

Registration is now open for the International Digital Curation Conference on December 1-3, in Edinburgh.

The first day will focus on three key topics: Radical sharing, new ways of doing science e.g. large scale research networks, mass collaboration, dynamic publishing tools, wikis, blogs, social networks, visualisations and immersive environments; Sustainability of curation; and Legal issues including privacy, confidentiality and consent, intellectual property rights and provenance The second day will be dedicated to research and development and will feature peer-reviewed papers in themed parallel sessions.

The organisers hope to run a programme of workshops on Monday 1 December that will include sessions on: Data Audit Framework (DAF), Digital Repository Audit Method Based on Risk Assessment (DRAMBORA) Interactive, the DCC Curation Lifecycle model and the Registry/Repository of Representation Information (RRORI) and related tools.

The National e-Science Centre is co-hosting the event with the DCC.  
More information is available here: <http://www.dcc.ac.uk/events/dcc-2008/>

## Forthcoming Events Timetable

October			
6-10	The DCC Digital Curation 101	NeSC	
13-15	Microarray data analysis and meta-analysis	NeSC	
16-17	Living texts: interdisciplinary approaches and methodological commonalities in biology and textual analysis	eSI	<a href="http://www.nesc.ac.uk/esi/events/907/">http://www.nesc.ac.uk/esi/events/907/</a>
20-21	OMII-UK Face to Face Meeting	NeSC	
27	e-Science Institute Public Lecture - Alex Voss	eSI	
November			
3	ECDF 'Taking Stock' event	NeSC	
3	MVM Research Symposium	TOE	<a href="http://www.nesc.ac.uk/esi/events/910/">http://www.nesc.ac.uk/esi/events/910/</a>
6-7	NERIES Data Portal for Seismology: Brainstorming Meeting	NeSC	
10-12	The Chris Date Seminar: A Relational Approach to SQL	eSI	<a href="http://www.nesc.ac.uk/esi/events/918/">http://www.nesc.ac.uk/esi/events/918/</a>
14	The e-Science Public Lecture - Climate Change	eSI	

**This is only a selection of events that are happening in the next few months. For the full listing go to the following websites:**

**Events at the e-Science Institute: <http://www.nesc.ac.uk/esi/esi.html>**

**External events: [http://www.nesc.ac.uk/events/ww\\_events.html](http://www.nesc.ac.uk/events/ww_events.html)**

**If you would like to hold an e-Science event at the e-Science Institute, please contact:**

**Conference Administrator,**

**National e-Science Centre, 15 South College Street, Edinburgh, EH8 9AA**

**Tel: 0131 650 9833 Fax: 0131 650 9819**

**Email: [events@nesc.ac.uk](mailto:events@nesc.ac.uk)**

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The deadline for the November 2008 issue is October 17, 2008