

# The impact and influence of Web 2.0-based Services on e-Research

## Workshop Schedule

3rd/4th November 2009 - Cramond room

### Day 1 – 3<sup>rd</sup> November 2009

**1030-45: Mark Baker**, University of Reading (mark.baker@computer.org)

Title: An overview of the workshop and a view of the potential outcomes and conclusions

**10:45-11:15 - Dan Katz** – University of Chicago, USA (dsk@ci.uchicago.edu)

Title: Web 2.0 vs. TeraGrid

Abstract: The TeraGrid is highly customer driven. There is a tension between existing current and potential future customers. This talk will look at how Web 2.0 is being used by the former group, how it could be used by the latter group, and how TeraGrid might change in response.

### Coffee/Tea Break - 11:15-11:45

**11:45-12:15 - Ali Khajey-Hosseini** - St Andrews - (alikhajeh1@googlemail.com)

Title: Cloud Computing: The first few years

Abstract: Cloud computing is a relatively new term that has only been around for a few years, yet it has sparked huge interest in the IT industry. Although academia has been researching some of its enabling predecessor technologies such as grid computing and virtualisation for a long time, it has been late in embracing the new research challenges posed by cloud computing. In this presentation, I will introduce cloud computing and its underlying concepts. I will also provide a whistle-stop tour of the recent cloud computing research done in academia. This includes research about technological advancements as well as issues that concern cloud service consumers, namely security and legal issues, costs, and the affects of cloud computing on work. I will end the presentation with a brief overview of the St Andrews Cloud Computing Co-Laboratory where we have deployed an experimental cloud that we use for our research.

Biography: Ali Khajey-Hosseini is doing his PhD at the University of St Andrews, looking at the migration of IT systems to the cloud. He has an MSc in High Performance Computing from the Edinburgh Parallel Computing Centre at the University of Edinburgh, and a BSc in Computer Science from the Robert Gordon University in Aberdeen. He is a member of the UK's Large-Scale Complex IT Systems Initiative ([www.lscits.org](http://www.lscits.org)) and a researcher at the St Andrews Cloud Computing Co-Laboratory ([www.cs.st-andrews.ac.uk/stacc](http://www.cs.st-andrews.ac.uk/stacc)).

**12:15 – 12:45 - Lakshmi** – Newcastle University - (visalakshmi.suresh@newcastle.ac.uk) - MESSAGE project (November 3rd)

Title: Data Dissemination for Environment Monitoring

Abstract: Pollution and environmental monitoring systems rely on real time streaming data feeds from novel and emerging intelligent transport systems. The data capture, processing and dissemination of information from heterogeneous data sources in real time presents a significant e-Science challenge, which has been tackled in the MESSGAE project.

This talk will describe the architecture designed and implemented for data fusion of real time and historic data. The power of emerging software techniques such as web 2.0 plays an important role in allowing users to visualise the data that is varying in time and space. This allows real time knowledge

discovery about air quality information including current pollution levels, traffic hotspots and pollutant dispersion.

### Lunch Break - 12:45 - 1345

**13:45 – 14:45 - Austin Tate** – Informatics, Edinburgh University, 2nd Life (a.tate@ed.ac.uk)

Title: Virtual Spaces for Intelligent Collaboration

Austin Tate & Ai Austin  
AIAI, School of Informatics, The University of Edinburgh  
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Second Life and other emerging massive on-line persistent 3-D virtual world environments are set to follow the web and web 2.0 as an essential element of future collaborative and social computing systems and are becoming more widely used in education, science, government, business, and a range of other applications. They will act as an integrator of many services which today use separate tools,; much like the arrival of the web browser did for a range of facilities in the early 1990s.

Our speaker, Austin Tate, Director of the Artificial Intelligent Applications Institute in the School of Informatics at the University of Edinburgh, and his virtual worlds counterpart 'Ai Austin', will introduce work at the Virtual University of Edinburgh - Vue – and describe what some University projects are doing in the Vue regions in Second Life. He will open up a discussion on how virtual environments are being used for research, collaboration and teamwork, especially in his own area of interest in improved emergency response.

**14:45 – 15:15 - Jason Hoyt** <jason.hoyt@mendeley.com>, (Nov 3<sup>rd</sup>)

Title: How a music service inspired a new way of thinking about research

Abstract: New developments in information technology influence the way researchers work, especially in boundary-spanning teams and interdisciplinary research fields. Currently, discussions of how to turn Web 2.0 applications into productive research tools can be found everywhere (e.g. Science Online London 2009, European Science Open Forum 2008, etc). Last.fm is a well-known Web 2.0 site and one of the largest social music services in the world. Could the underlying principles of Last.fm be used in an academic setting to advance research? If so, how must that workflow be implemented, tested, and what are the infrastructure requirements? A real-world application of a “Last.fm for research” will be demonstrated and discussed along these lines.

**Jason Hoyt** holds a Ph.D. in Genetics from Stanford University, CA, USA. There, he worked under the direction of Michele Calos researching human gene therapy with site-specific non-viral vectors. Also amongst his direct research advisors were Gavin Sherlock, Anne Brunet, and Andrew Fire, 2006 Nobel Laureate in Medicine or Physiology. While a graduate student at Stanford, Jason saw the need and opportunity to improve collaborative research through modern Internet concepts and technologies. This resulted in founding Ologeez.org (peer-review literature search and recommendation engine for academics and industry professionals), which has been featured on TechCrunch.com. Since March 2009, he is the Research Director of Mendeley.com based in London, UK.

### Coffee/Tea Break - 1515 - 1545

15:45 – 16:30 - General Discussion and Debate.

19:30 - Dinner will be held at the [Hotel du Vin](#)

## Day 2 – 4<sup>th</sup> November 2009

**10:00 – 1030 - Pauline Yau** - <http://www.huddle.net/> (pauline@huddle.net)

Title: Using Web 2.0 for Collaborative Research

Abstract: Huddle is a UK-based Web 2.0 online collaboration company. Recently named as one of the top 50 start-ups to watch by Business Week magazine, Huddle is increasingly used by educational institutions globally to enable collaboration for staff and students, and in particular collaborative research. Are you interested in how Web 2.0 applications are being used by researchers? Come and learn how Web 2.0 technologies are enhancing the teaching and learning experience, and how you can engage researchers and students by encouraging social networking and collaboration with their colleagues and partners.

**10:30-11:00 - Dejan Milojicic**, HP (dejan.milojicic@hp.com)

Title: Open Cirrus™ Cloud Computing Testbed: Federated Data Centers for Open Source Systems and Services Research

Abstract: There are a number of important and useful testbeds, such as PlanetLab, EmuLab, IBM/Google cluster, and Amazon EC2/S3, which enables researchers to study different aspects of distributed computing. However, no single testbed supports research spanning systems, applications, services, open-source development, and datacenters. Towards this end, we have developed Open Cirrus, a cloud computing testbed for the research community that federates heterogeneous distributed data centers. Open Cirrus offers a cloud stack consisting of physical and virtual machines, and global services, such as sign-on, monitoring, storage, and job submission. By developing the testbed and making it available to the research community, we hope to help spur innovation in cloud computing and catalyze the development of an open source stack for the cloud.

Dr. Dejan Milojicic is a senior researcher and a director of Open Cirrus at HP Labs. He has worked in the area of operating systems, distributed systems, and service management for more than 20 years. He has been the program chair of the IEEE Agent Systems and Applications Symposium (ASA/MA'99) and of the first USENIX Workshop on Industrial Experiences with System Software (WIESS'2000). Dr. Milojicic published in many journals and at various events. He is currently on the editorial board of IEEE Internet Computing and he is an inaugural editor of IEEE Computing Now, a front end to all IEEE magazines. He has been engaged in various standardization bodies, such as OMG and Global Grid Forum. He is a member of the ACM, IEEE, and USENIX and an ACM distinguished engineer. He received his BSc and MSc from University of Belgrade and his PhD from University of Kaiserslautern. Prior to HP Labs, Dejan worked at Institute "Mihajlo Pupin", Belgrade and at OSF Research Institute, Cambridge, MA.

### **Coffee/Tea Break - 11:00-11:30**

**11:30 – 12:30 - Sara de Freitas**, Director of Research (SFreitas@cad.coventry.ac.uk)  
The Serious Games Institute, Coventry University Technology Park

Title: The power of immersive experiences: using serious games and virtual worlds to enrich learning, social interactions and create new spaces.

Abstract: The presentation will outline trends in serious games and virtual worlds, present a notion of immersive learning experiences and demonstrate case studies from current research being undertaken at the Serious Games Institute, with examples from practice. The presentation will question whether immersive experiences are indeed changing how we learn and the spaces that we inhabit.

### **Lunch Break – 12:30 – 13:30**

**13:30 – 14:00 - Kenneth Stevenson**, Glasgow University, (k.stevenson@compserv.gla.ac.uk) IT Services, Glasgow University (4th November)

Title: Buy one get four free? Virtually!

Abstract: Today's multi-core, multi-processor servers are becoming increasingly powerful and in many cases provide surplus capacity, as single workloads are often not an ideal fit for the available resources. Virtualisation is recognised as a way of harnessing this resource and has become a popular technology in the data-centre for tasks such as systems development, consolidation and disaster recovery. Are virtual machines now a viable component to add to the e-Science infrastructure and what features might they offer which traditional resources can't? After a quick review of some typical features of a virtual machine environment some suggestions will be made as to how virtual machines could be used to provide resilience, security and dynamic deployment of on-demand capacity for e-Science computation.

**14:00 – 14:30 - Jeremy Frey**, School of Chemistry, University of Southampton.

Title: Inside Laboratory 2.0: Blogs and other Web 2.0 technologies for the laboratory researcher

Abstract: Computers and digital technology has been behind significant advances in the way laboratory research is undertaken, but in the past each system had to be specially written to support the necessary automation, monitoring, control and analysis. This was fine for large-scale projects but unaffordable for the more typical smaller research groups which make up the long tail of research undertakings. The new approaches typified by Web 2.0 services open up more generic solutions that are more than fit for purpose but present a low barrier to adoption in the laboratory. I will illustrate the power and the limitations of this idea with examples of 'Blogs as Laboratory Notebooks' and laboratory data mashups.

**14:30 – 14:45 - Mark Baker**, University of Reading (mark.baker@computer.org)

Title: Summary and Thoughts of the Views/Idea discussed

[Coffee/Tea Break – 14:45 – 15:15](#)

15:15 – 16:30 - General Discussion and Debate.