

# Hypertext 2008: A Great Safari

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The 21<sup>st</sup> ACM Conference on Hypertext and Hypermedia was held in Pittsburgh, PA from June 19th to 21st of 2008. Like all great coming-of-age parties it was a mix of celebrating the past and looking forward with excitement to the future. Over the last few years the conference has grown in scope to cover a wide range of trends and technologies concerned with connecting information and people. This year the main themes were Information Linking and Organization, Social Linking, Applications of Hypertext, and Hypertext, Culture and Communications; once more attracting a fascinating mix of people from both the technical and literary worlds.

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## 1. INTRODUCTION

There's something rather special about the ACM Hypertext Conference. Something unique about its mixture of technology, arts and social science that sets it apart from other events and makes it somewhat of a highlight of the academic year. Of course, I may be biased. Ten years ago I was a PhD student just beginning to get involved with Open Hypermedia and Web-based research and ACM Hypertext 1998 (also held in Pittsburgh) was the first international conference that I attended. So coming back to Pittsburgh ten years later for ACM Hypertext 2008 was always going to be a bit special, and prompted me to reflect on how the Hypertext landscape has changed.

I arrived late enough on the Hypertext scene to miss the initial impact of the World Wide Web, but even in 1998 it was clear that the growing popularity of the Web was changing the hypertext research agenda and that the community, and the conference, would need to adjust significantly.

That adjustment has taken more years than might have been expected, and some of those years have been rather lean, with the conference shrinking to symposium size in 2005, and questions being asked about the future of such an eclectic event. Happily the last few years have seen the Hypertext conference find itself again. Social networking and new Web 2.0 styles of authoring have dramatically increased interest in information networks, folksonomy building, and hypertext as digital communication, journalism and art.

Last year in my blog I described Hypertext as something of a fringe event, and suggested that we should all hang out at the fringe occasionally because it is good for the soul! I'm

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not sure that it's a characterization that holds true anymore, although the sentiment was well meant. This year the conference seemed assured, balanced and significant; a 21<sup>st</sup> birthday celebration that heralded a genuine change of pace.

This was surely helped by excellent local organisation by Peter Brusilovsky, Stephen Hirtle and their team from the University of Pittsburgh, not to mention an impressive conference dinner on Mount Washington overlooking the city, but perhaps the main reason is that Hypertext research has come to terms with its own success. We don't exactly have the one global hypertext system envisioned by Bush, Engelbart and Nelson, but we do have a global infrastructure, and islands of innovation, where hundreds of thousands of people participate daily in writing, sharing, tagging and linking.

These are exciting times. As Jill Walker might say, Hypertext has gone feral<sup>1</sup>, it has escaped into the wild, slipped our control, and become something more than we imagined. The Hypertext Conference is no longer a fringe event – it has become a Great Safari.

## 2. WORKSHOPS

This year I was the Hypertext Workshops Chair. Motivating people to take on the responsibility of running a workshop is a tricky business, but I was lucky enough to have a number of volunteers and in the end we ran two very successful workshop events.

The first was titled 'Creating out of the Machine' and was organized by Stephen Ersinghaus (from Tunxis Community College, Connecticut). Stephen's workshop signified a welcome return to the main program for literary hypertext, and gave people who are actively engaged with the creation of digital narratives a forum in which to share ideas, approaches and tools.

The second was a workshop on the emerging discipline of 'Web Science', jointly managed by myself and Weigang Wang (from the University of Manchester, UK). Web Science is a new interdisciplinary field that lies at the boundary of Computer Science, Sociology, Psychology, Media, Economics and Law. Its aim is to understand the Web and its impact on the way people think, behave and interact. As an emerging discipline the boundaries of Web Science are somewhat blurred, and the workshop gave people

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<sup>1</sup> Jill Walker, "What is Feral Hypertext", Mar 2007. Blog entry: <http://jilltxt.net/?p=1918>

working in the area a venue where they could discuss the commonalities of their research, the advantages and disadvantages of being identified as an independent discipline, and also to help define what may become an important new area.

### 3. KEYNOTES

This year's keynote speakers were both important figures in the study of information and social networks: Bernardo Huberman (from HP Labs) and Prof. Jon Kleinberg (from Cornell University).

Bernardo Huberman is author of the book "The Laws of the Web: Patterns in the Ecology of Information" (published by MIT Press). He spoke about the difficulties of defining metrics for, and measuring, the success of material on the Web. In particular, the interplay between popularity, novelty and collective attention. This last metric defines our collective interest in new material, which fades exponentially over time. He also described how he and his team have studied opinion formation in online social networks, observing how they fit into patterns of locality, and how certain important members of a community can be key to the distribution and formation of an opinion.

Jon Kleinberg's work is also focused around the connection between information and social networks. He spoke about how the evolution of information, opinion and belief in a social network can be likened to a biological system, where an epidemic spreads a contagion through a population. He also spoke about how we can begin to model the process by which people decide to act on information, which in turn affects the flow around the network.

For both men what seemed to motivate and excite them was the ability to work with real systems and genuine data from millions of users and interactions. The goal in both cases is a richer understanding of how communities react and process information, which not only allows us to predict how information might evolve in a network (such as a news story breaking on a social networking site), but might also allow us to build more effective social networking tools in the future.

### 4. MAIN SESSIONS

The main conference sessions took place over two days, and saw the presentation of fourteen full papers and thirteen short papers in eight sessions. At any conference it is

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impossible for any one person to attend all of the sessions and see all of the papers presented (so apologies if you aren't mentioned), however a number of presentations did stand out for me.

The first was the winner of the 2008 Douglas Engelbart Best Paper Award. Xiaolin Shi, Matthew Bonner, Lada Adamic and Anna Gilbert are from the University of Michigan, their paper, 'The Very Small World of the Well-Connected', proposed a new method for studying large online networks. They explained that when considering a network it is possible to create simpler graphs that are representative of the whole network, a process called graph synopsis. These synopses maintain the key characteristics of the original network. They can be derived from a sub-graph of the network made up of key vertices, and are smaller and easier to analyse and manage than the full versions. They call their method *vertex-importance graph synopsis*, and present some impressive empirical research that demonstrates that the resulting synopses can be used in lieu of the original sub-graph for analysis (and sometimes in lieu of the entire original network).

The winners of the Ted Nelson Newcomer Award were Klaas Dellschaft and Steffen Staab from the Universität Koblenz-Landau in Germany. Their paper, 'An Epistemic Dynamic Model for Tagging Systems', presented a new model of behavior in systems where users can tag resources. Existing models tend to focus on the way in which users imitate each other, but the Koblenz-Landau model also includes information about the prior knowledge of users by assuming a contribution from the user's active vocabulary.

The work in these two winning papers is significant for many reasons, but for me it's because they are not just about doing a data analysis, but extending the theoretical tools and models with which the analysis is done. This is an encouraging sign of maturity in what is still a relatively new part of the Hypertext domain, and shows that the community is not only trying to understand the feral behavior that can be observed out there in the wild, but also wants to build better binoculars with which to observe it.

As well as these award winners I was also taken by David Kolb's excellent paper and presentation 'The Revenge of the Page' that examined the viability of complex hypertexts 'in the pitiless gaze of Google Analytics'. David Kolb had created a new complex hypertext work, available on the Web, with a mix of sophisticated link patterns designed to affect the reader's experience. However Google's statistics told him that few visitors visited his work for more than a few seconds, the majority were looking for pictures via

Google Images, and even when these were factored out his visitors only stayed for a minute or so. It certainly sparked some interesting conversations about the viability of nuanced hypertexts, the unexpected arrivals that result from search tool indexing, and whether hypertext literature is fighting against a 'quick-fix' media culture that is prevalent on the Web, and may even be spreading into normal media.

## 5. POSTERS AND STUDENT COMPETITION

This year the conference took the unusual step of foregrounding the poster session, including a one-minute poster pitch at the end of the opening keynote, and following this directly with the poster event itself – effectively making the posters the opening session of the main conference. It was an organizational decision that paid off, and the poster session worked really well as an ice-breaker, proving an early opportunity for discussion, both with the poster presenters and also other delegates.

If there's one thing that the poster session proved it was the wide diversity of work taking place in the community, from knowledge-based teaching systems, to analyses of blog discussion, spatial and social hypertext, conversation systems, hypertext models, RDF, Open Hypermedia and ZigZag.

A new aspect of the poster session this year was the inclusion of the ACM Student Research Competition sponsored by Microsoft Research. A selection of the best student posters were selected to go through to a second session, where the student authors had the opportunity to present their work to an audience and a panel of competition judges. This later session was great fun, helped by Stephen Hirtle's good-natured turn as master of ceremony. Three students were eventually selected as the winners: Yves Petinot from Columbia University took first place for his presentation of 'Context-based URL Summarization', Charlie Hargood from Southampton University (my own PhD student) was second with his work on 'A Thematic Model for Narrative Generation', and Danielle Hyunsook Lee took third place with her presentation on 'PITTCULT: Recommender System using Trusted Human Network'. The three finalists go through to the inter-conference on-line stage, with the chance of winning a trip to Washington, DC for the eventual final. Good luck to them all!

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### 6. CONCLUSIONS

This year's Hypertext conference was a great success. A major positive was not only the inclusion of new people from the social networking community, but also the rekindling of Literary Hypertext at the conference, through Stephen Ersinghaus' workshop, Mark Bernstein's Tinderbox tutorials and a small but well received number of papers, including David Kolb's 'Revenge of the Page'. I hope that this is a trend that can continue in the future, and that we may see the return of a performance space at the conference to encourage other writers and artists to join the Hypertext community.

The spirit of the conference may have stayed, but some things have changed. The Web Science workshop was only the start of what turned out to be a major trend, a focus on hypertext in the wild and the analysis of the everyday use of hypertext tools by millions of web users.

In the rush for the plains perhaps some things have been left back at the camp. Compared to previous years there was no grand vision behind much of the work presented, I'm thinking of the efforts in the past to build Open Hypermedia Systems, Berners-Lee's own push to achieve a Semantic Web, or even the exciting experiments with Ubiquitous and Location-Based hypermedia. There's good work going on, perhaps even great science, but the community seems to be playing it a little safe, and focusing on the here-and-now rather than looking forward, or up to the blue sky.

I began this trip report by saying that there is something special about the Hypertext Conference, and I'm happy to report that this continues to be true, even after the conference has repositioned itself as a major forum for Web 2.0 and Social Networking research. Nowhere else will you find this mix of backgrounds and specialties in a group of people who are similar only in that they think in interesting ways.

Further information about the 2008 conference, including the papers and photos from the event can be found on the Hypertext 2008 blog: <http://hypertext2008.blogspot.com>, and further details on next years 2009 event, to be held June 29<sup>th</sup> – July 1<sup>st</sup> in Torino, Italy, will be available on the SIGWEB website: <http://www.sigweb.org/>.

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