

Metaverse U 2.0 Conference Notes

Stanford University, CA, May 29 - 30, 2009

Dixi Louise Strand, PhD, Project Manager, Roskilde University

Metaverse U web site

<http://metaverse.stanford.edu>

Metaverse U Ustream

<http://www.ustream.tv/channel/metaverse-u-conference>

Metaverse U Twitter

<http://twitter.com/#search?q=%23metaverseu>

Innovation Center Denmark

www.innovationcenterdenmark.com

Stanford Humanities Lab

<http://shl.stanford.edu/>



Henrik Bennetsen

<http://www.henrikbennetsen.com>

Jeffrey T. Schnapp

<http://www.stanford.edu/~schnapp>

Speed limits

<http://www.cca.qc.ca/pages/Niveau3.asp?page=speed&lang=eng>

Bornholms kunstmuseum (20. sep. 2009 - 3. jan. 2010 - Speed Limits)

<http://www.bornholms-kunstmuseum.dk>

John Hurliman blog

<http://www.jhurliman.org/>

Cable beach demo and updates

<http://code.google.com/p/cablebeach/>

The second Metaverse U Conference was a single-track invitational event featuring an agenda of 18 impressive speakers and an ‘unconference’ afternoon consisting of smaller group discussions revolving around emergent themes suggested by the participants. The main purpose of the conference was to explore the cutting edge applications of virtual worlds and the open platforms that drive them. The conference was streamed real time through Ustream and a remote audience of 40-70 people followed the stream and participated with comments and questions through Twitter.

Four members of the Virtual Worlds research team were present at the conference: CarrieLynn Reinhard, Ates Gürsimsek, Sisse Siggaard Jensen, and Dixi Louise Strand. They had been invited by Stanford Humanities Lab and Innovation Center Denmark, Silicon Valley. Innovation Center Denmark aims to build bridges between Silicon Valley and Denmark in areas of ICT, Clean Tech and Life Sciences, and as part of this effort, the center co-sponsored the MetaverseU conference.

The conference was opened by the key organizer, Henrik Bennetsen, with a quote by Paul Saffo: “Never confuse clear sight with a short distance” alluding to the gap between technological imaginings and the struggles to actually build and make them work. Bennetsen furthermore introduced the agenda of the conference and its purpose of bridging the divide between issues related to the technical, platform side of the metaverse and issues related to the content, user-end.

Jeffrey T. Schnapp, cultural historian and founder of the Stanford Humanities Lab in 2000, was the first speaker. He presented his interest in how the metaverse might be of interest to museums. Museums are traditionally tied to physical locations and their collections of objects. This notion of the museum, described by Schnapp as a ‘vault’-model, is presently being challenged in a number of ways. For example the visitor’s expectations of interaction, the extended meaning of location, activities before and after the actual museum visit, as well as the ways in which objects are collected, preserved, and disseminated. Increasingly, museum artifacts are archived as 3D content and thus shared in new ways, across locations and traditional boundaries of the single museum as vault. This shift was described by Schnapp as ‘the augmented museum’, subsequently creating new possible audiences (the young, minorities) as well as new demands to design and planning processes. Schnapp elaborated upon Speed Limits, a project developed as a way of modeling and experimenting with the augmented museum. It consists of a virtual platform linking together three physical exhibitions, Canadian Centre for Architecture (Montreal), the Wolfsonian-FIU (Miami), and the Bornholms Kunstmuseum, Denmark. These can be viewed, commented on, and critiqued in several editions, and the project then reembeds the virtual content into the physical space of the three shows. Through this work Schnapp seeks to build a more general model, or set of best practices, upon which museums can learn from in the future.

Next John Hurliman, Software Engineer in Intel's Virtual Worlds Infrastructure team, presented the Cable Beach project. Cable Beach researches the architecture of virtual worlds from a service-based perspective, addressing issues of trust and scalability when dealing with Internet-scale deployments of a 3D web. He presented new possibilities for transferring user identity and content between significantly different worlds, e.g. through existing open protocols such as OpenID and OAuth. A demo illustrated the authentication

flow in Cable Beach.

Sirikata

<http://www.sirikata.com/wiki>

Sirikata browser demo Vimeo

<http://vimeo.com/4969011>

Henry Lowood

<http://www.stanford.edu/~lowood/>

Preserving Virtual Worlds

<http://pvw.illinois.edu/pvw/>

Machinima Archive

<http://www.archive.org/details/machinima>

Project Wonderland

<https://lg3d-wonderland.dev.java.net/>

Wonderland preview YouTube

<http://www.youtube.com/watch?v=-IT8Pags4g>

ScienceSim

<http://sciencesim.com>

OpenSim

http://opensimulator.org/wiki/Main_Page



Virtual Worlds Roadmap

<http://virtualworldsroadmap.blogspot.com>

Ewen Cheslack-Postava and Daniel Horn, Ph.D. candidates at Stanford, presented Sirikata, a new BSD licensed platform for virtual worlds. Many existing virtual world architectures are designed largely as walled gardens. These systems both intentionally and unintentionally make it difficult for multiple entities to participate in the running and simulation of virtual worlds. Such architectures provide private companies with a security advantage and control, but are also limiting for the flexibility of user interactions, for example in gaining ownership of inventory across worlds. Sirikata addresses issues of scalability and federation both within a single virtual world and between multiple virtual worlds. A demo illustrated the Sirikata 3D browser and some of its editing features.

Henry Lowood, historian at Stanford Humanities Lab, gave a talk about the Ultimate Archive. Rehearsing the impacts of virtual worlds upon libraries and museums, Lowood linked ‘the archive’ to a new era in computing history based on notions of space, experience, works, context, and creativity. His interest revolves around preserving this historical shift and the experiences and events entailed in a virtual repository. He gave a range of examples such as pictures, event descriptions and captures, machinima, web-pages developed by the player/user community and discussed how we might develop practices for preserving these as historical artifacts. Just as the technologies of virtual worlds grew out of technologies of simulation, entertainment, and gaming, Lowood suggested that such a virtual repository might also deploy these technologies to construct and engage historical experiences.

Next, Project Wonderland was presented by Paul Byrne, Sun Microsystems. Project Wonderland is a 100% Java and open source toolkit for creating collaborative 3D virtual worlds. Within these worlds, users can communicate with high-fidelity, immersive audio, share live desktop applications and documents, and conduct real business. Byrne ran a preview of remote, collaborative work where people collaborate around a multi-user whiteboard and the drag-and-drop of 2D and 3D content in a virtual world.

Tom Murphy from Contra Costa College in San Pablo led an in-world tour of ScienceSim with avatar/person Mic Bowman of Intel, and in-person Charlie Peck of Earlham College. Their tour included fern propagation, science of galaxy formation, and nanopattern formation of polymers. Focus was on the collaborative visualizations driven in real-time by simulations running on out-of-world computing resources. These examples illustrated their work on building interactive and visually rich forums for science and teaching and the challenges of scaling, integration, voice-lists, and in-world to out-of-world controls. Also, the presentation exemplified a seamless transfer between Second Life and a private OpenSim.

Seung Wook Kim, Samsung R&D, introduced the Virtual Worlds Roadmap as a special interest group working to assess and predict the development of virtual worlds in relation to business, education and mainstream markets. Roadmap analyses aim to gain an overview of new and future application scenarios. He presented examples from the roadmap’s collection of virtual world success case studies: museum exhibitions, social viewing of sports events, job-site training and simulation in the emergency room, military operations, and industry setting. The Virtual Worlds Roadmap is a commons-based effort, and everyone at the conference was invited to take part by commenting on published drafts, volunteering as an author or working group participant, and attending workshops.

Sheldon Brown, Director of the Center for Research in Computing and the Arts at UCSD presented his work at the intersection of art and computer science.

Sheldon Brown
<http://craa.ucsd.edu/sheldon>

Scalable City
<http://www.scalablecity.net>



Ryan McDougall LinkedIn
<http://www.linkedin.com/in/ryanmcdougall>

RealXtend
<http://wiki.realxtend.org>

Vangelis Kokkevis Facebook
<http://www.facebook.com/people/Vangelis-Kokkevis/768204776>

Google O3D
<http://code.google.com/apis/o3d>



Christa Lopes
<http://www.ics.uci.edu/~lopes>

Booyah
<http://www.booyah.com>

Virtual Worlds Research
<http://worlds.ruc.dk>

Kyle Machulis
<http://www.nonpolynomial.com>

His interests revolved around developing better platforms and infrastructures for virtual worlds, in particular platforms that may create a better aesthetic experience for the user. He illustrated a current project, Scalable City, which creates an urban/suburban/rural environment via data visualizations drawn from a real world referent. The city consists of 5 major components - landscape, roads, lots, architecture, and vehicles that are violently transformed by a process of duplication, rotation, and amplification as the user moves around. An incredible visual impression was created of a landscape being devoured, imploded, and transformed. Sheldon Brown also alluded to his interest in how virtual worlds may generate content for other media, such as cinema, but unfortunately time did not allow him to elaborate on his work with machinima.

The next speaker, Ryan McDougall, is the principle developer on the open source RealXtend project. The project is based in Oulo, Finland and is financed through cooperation between the City of Oulo, Nokia, and a number of other smaller private companies. Similar to some of the earlier presentations, McDougall discussed the integration of virtual worlds as a key problem and how an open source platform and more community oriented virtual worlds might address this issue. He presented a new virtual RealXtend 3D viewer and showed how it runs on multiple protocols and aims at diverse uses ranging from business to social and gaming.

Visiting from Google, Vangelis Kokkevis presented the new O3D as an open-source web API (Application Programming Interface) for creating rich, interactive 3D applications in the browser. Kokkevis gave an architectural overview of O3D and how it compares to other 3D APIs. With an early release of this new API Google hopes to contribute to the development of a new open web standard for 3D graphics in cooperation with Mozilla among others.

The next speaker was Crista Lopez, Associate Professor at the University of California, Irvine. She presented the Hypergrid, another architecture for making different Virtual Worlds interoperable with each other and with the Web. The central idea was to create a web of virtual worlds that allow users to travel and carry with them home assets and inventory services as if they were traveling around a single system. Lopez illustrated this idea with a paper model that showed how locations on a map act as hyperlinks or teleports to another world, e.g. from Second Life to a private OpenSim. She discussed security issues and property rights as one of the main challenges of the project.

Closing the first day of presentations Keith Lee spoke on behalf of his newly founded company Booyah. Until recently Lee was employed as lead producer at Blizzard, and in his talk he recapped his experiences from the gaming industry. He gave examples of how the game World of Warcraft was created around three key motivators; scoring and level advancement, scarcity and rewards, and shared communities, and subsequently discussed how the gaming techniques of active engagement and motivation might be applied more broadly to other application areas. Lee stressed the importance of such factors in moving from a broadcast media paradigm to an engagement media paradigm.

Opening the second day of the conference was our project group's presentation. Sisse Siggaard Jensen, CarrieLynn Reinhard, and Ates Gürsimsek gave a joint presentation of the research project's virtual laboratory and the various focus areas such as sense-making of new media, inworld design processes, and learning bots. Three short videos illustrated these research interests and how virtual worlds can offer a fruitful laboratory for disciplines such as media studies, design studies, and robotics.

Kyle Machulis, previously a programmer for Linden Lab, gave a talk on alternative human interface devices, besides the mouse and keyboard, and their relevance to virtual worlds. He gave an overview of the consumer level

products currently on the market (or available soon) and how these can be integrated into virtual world platforms in order to give the user deeper experience inWorld including touch, taste, smell, and texture as well as feeding the user's bodily reactions back into the system.

Robert Hamilton
<http://ccrma.stanford.edu/~rob>
Juan-Pablo Caceres
<http://ccrma.stanford.edu/~jcaceres>



Remi Arnaud's blog
<http://software.intel.com/en-us/blogs/author/remi-arnaud>

COLLADA
<https://collada.org>

Damon Hernandez blog
<http://damonhernandez.blogspot.com>

Web3D Consortium
www.web3d.org

Saki Bailey LinkedIn
<http://www.linkedin.com/pub/saki-bailey/10/199/a3>

Kira Institute
<http://www.kira.org>

Conference Wiki
http://www.stanford.edu/group/metaverse/cgi-bin/wiki/index.php?title=Main_Page

Music in the Metaverse was the title of the next talk by Robert Hamilton and Juan-Pablo Caceres from the Department of Music at Stanford. They discussed virtual environments as spaces for musical performances and different ways in which the virtual can be drawn upon to support geographically distributed performances or performances that play the virtual space itself as an instrument. They also presented their plans for a performance this fall, where musicians on both acoustic and electronic instruments located in Stanford, CA and Milano, Italy will meet online in a custom Sirikata environment before a live audience in Milan.

Remi Arnaud leads the Intel Game Engine Technology team. He presented COLLADA, a COLLABorative Design Activity for establishing an open standard interchange file format for interactive 3D applications. COLLADA defines an open standard XML schema for exchanging digital assets among various graphics software applications that might otherwise store their assets in incompatible file formats. COLLADA is managed by a non profit technology consortium, the Khronos Group. Arnaud gave a technical overview of the development history and how it has been driven by end-user and business needs.

Damon Hernandez, director of the Outreach and Student Sectors of the Web3D consortium, gave an illustrative talk on how web 2.0 is evolving into a 3D web. The many existing virtual worlds, mirror worlds, and web3D applications are examples of this. Hernandez stressed the necessity to work with standards in order to enable such a transformation. He has worked with the Web3D Consortium to provide such a forum and a community-based creation of such open standards. The result, extensible 3D (X3D) is an open standard for real-time 3D graphics, described by Hernandez as the HTML of the 3D web. His presentation illustrated how it allows for real-time communication of 3D data across applications and networks, and it can be tailored for use in engineering and scientific visualizations, CAD and architecture contexts, medical visualizations, training and simulations, multimedia, entertainment, education etc.

In the final presentation project manager Saki Bailey related the history and current activities of the Kira Institute, a virtual worlds organization and non profit organization based in Second Life. Bailey explained the mission of exploring virtual worlds as a medium for interdisciplinary and transdisciplinary collaboration. She spoke of ways in which virtual worlds might realize ideals of an open, dynamic, and democratic form of science, for example by facilitating the interaction of scientists and lay people. The conference participants were invited to visit the Kira Dome space in Second Life and attend one of their events or weekly workshops.

The last part of the conference was labeled 'unconference'. Following an Open Space methodology, Henrik Bennetsen asked participants to suggest themes of interest. These themes were randomly posted on a whiteboard and in the next two sessions we formed 6 different groups under various themes such as Sirikata, COLLADA, user interaction, interoperability, inWorld designing etc. Discussions were very lively, and some of the notes have been posted to the conference wiki.