iUniverse: A Collaborative Information Universe for IU

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The iUni project[1] is an exciting collaboration between the School of Library and Information Science (SLIS) and University Information Technology Services (UITS), primarily involving the Advanced Visualization Laboratory (AVL) [2]. Initiated in Summer 2001, the project's goal is to provide a 3D web-based collaboration mechanism for all Indiana University (IU) faculty, staff and students on any of the eight IU campuses, located throughout the state of Indiana.

Representatives from both SLIS and the AVL chose Activeworlds.com's Universe software for the initial solution because of its already existing user base among IU faculty and students as well as the Internet community. The software allows participants to create and maintain every detail of their own 3D world, from claiming real estate to building advanced 3D structures and/or visualization scenarios to writing programs that interact with their world. Those who do not need their own world can still join in on the collaboration by registering as an iUni citizen and logging into one of the existing iUni worlds using the freely available iUni browser.[2] Possible uses of this software include: (a) online course instruction where the class is allocated a world and students enter and learn interactively through interactive exploration, and (b) advanced visualization worlds where experts meet other collaborators with the joint goal of visual data exploration (i.e. medical, molecular, architectural). Once inside a world, all participants are represented by avatars and can see and chat with other participants in real-time.

Currently, the universe hosts 16 virtual worlds. Among them are:

- The **–IU-** world is the centerpiece of the Indiana University system. It was designed to be the central world linking the 8 IU campuses which are located throughout the state of Indiana. This world is a symbol for the geographic distribution that is possible which such technology.
- **Hometown** is an audio walking tour of Terre Haute, Indiana in the summer of 1926 designed in collaboration with Tom Roznowski, WFIU Radio.
- **iPalace and iGarden** are two 'twin worlds' used to design and evaluate a shared resource of online documents for faculty and students at the School of Library and Information Science (SLIS) at Indiana University (IU).
- **SoFA** is intended to serve as a creative outlet for the School of Fine Arts to exhibit art displays that might not be possible to create in the real world due to issues of money, scale, gravity, etc. SoFA also serves as a meeting place for artists and the public to view these exhibits and talk about design issues. The world itself is designed to be conducive to the creation of art and doesn't conform to conventional environmental layout.

[1] http://iuni.slis.indiana.edu/
[2] The iUni browser is available for download at http://iuni.slis.indiana.edu/resources.html

- **SpaceVillage** uses our solar system as a teaching tool. Students are presented with challenges that may be solved by floating through space to the different planets orbiting the sun. It is intended to be used by kids from the Boy's and Girl's Club in Bloomington.
- **i-Read** served as a virtual meeting place for the weekly reading group on "Network and Cluster Analysis"[3] held in Fall 2001 and Spring 2002 By meeting virtually in i-Read, group members could attend remotely, people outside IU could participate, and authors of the discussed papers and system prototypes could be invited to join the discussions.
- **CP2P, Peace, Harmony, Unity, and Hope** were designed by Barbara A. Bichelmeyer's research group at Instructional Systems Technology. The worlds intend to promote cultural understanding and collaboration among designers, teachers, and students from four countries: Korea, Taiwan, Turkey, and the United States.
- **AVL:** As a testing environment for advanced visualization within iUni, the AVL world has no well-defined structure. Inside this environment, staff from Indiana University's Advanced Visualization Laboratory is investigating ActiveWorlds technology as a media for applications such as molecular dynamics, biomedical imaging, volume visualization, media streaming, etc.
- **iUni** was used to teach the L578 User Interface Design[4] course in Fall 2000 and to demonstrate the feasibility of creating a "Collaborative Information Universe for Indiana University" using Active Worlds technology. It is an exact copy of the "iuni" world in the Eduverse universe[5] and was made available in iUni for historical reasons.

Research currently in progress focuses on the design of tools and building blocks that ease 3D world design, utilization, and evaluation.

The recently funded "Building Blocks for Virtual Worlds" project[6] is a collaboration with Margaret Corbit (Cornell University) and Bonnie DeVarco (VLearn3D SIG of Contact Consortium) that aims to develop design principles for a starter kit for educational virtual worlds. It is hoped that this research will help support educational goals and enhance performance as teachers become the everyday users of advanced network technologies.

Another line of research applies data analysis and information visualization techniques to help ease social navigation in 3D for users, support designers to evaluate and optimize world layout and interaction design, and to enable researchers to analyze and study online communities [1, 5].

A third line of research aims to exploit 3D desktop interfaces as a means of increasing access to geographically distributed information and expertise [3, 4].

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[3] http://ella.slis.indiana.edu/~katy/ReadingGroup.html
[4] http://ella.slis.indiana.edu/~katy/L578-F00/
[5] http://www.activeworlds.com/edu/
[6] http://vw.indiana.edu/building-blocks/

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