April 3- April 9, 2011

Music from things you touch every day
Source: The Advocate

With a little imagination, you could look at the young men and women playing on the stage Monday night at the Manship Theater in Baton Rouge and see any other workaday musicians performing for an audience.

Well, maybe more than a little imagination.

Instead of violins and trumpets, the nine musicians — seven LSU grad students and two LSU professors — were typing on laptop computers, moving objects in front of webcams, manipulating joysticks and waving around wiimote controllers. They even created an instrument called a "gua" — played on an iPad.

"What we're trying to do with this laptop orchestra is take these ordinary objects — ordinary computer objects — and use them in extraordinary ways, ways that people don't normally think of for music-making," explained Stephen David Beck, an LSU music professor and a director of the Laptop Orchestra of Louisiana.

LSU dietitian major Sarah Kelly, who has a friend in the orchestra, was one of about 50 people who braved bad weather to come to Monday's show. She said she was happily surprised that unlike other electronic music she's heard before, the laptop orchestra was not all "squawks and beeps."

"Usually, when you watch music you hear instruments that you never touch in real life," Kelly observed. "Here, you're hearing music from things you touch every day."

Laptop orchestras are not new. Stanford and Princeton have had them for years. Beck said he resisted forming one for years at LSU.

"The last thing I find interesting is to watch someone type on a computer and make sounds," Beck said. "That to me is completely boring."

"We do it in our office all day," added Jesse Allison, a fellow LSU music professor and co-director of the orchestra.

The possibilities, though, were too interesting to pass up, Beck said.
So, the Laptop Orchestra of Louisiana was born. It's a collaboration between the LSU Center for Computation and Technology's Lab for Creative Arts & Technologies, the AVATAR Initiative in Digital Media and the LSU School of Music.

The resulting orchestra is a bit different from its brethren at Stanford and Princeton. There, large groups of undergraduate students perform music composed by others, while LSU's orchestra is peopled with grad students who both compose the music and help write the code that drives it, Beck said.

The student players are Jeff Albert, Lindsey Hartman, Nick Hwang, Corey Knoll, Andy Larson, Yemin Oh and Brandon Thomas.

Beck said they try to keep the performances lively and recognizable, with talking and joking among the players and gestures that people recognize from watching live music.

"The physical interaction is really important to the way we experience music," Beck said. "We didn't want to lose that aspect of it."

Another twist is that the musicians supply information to and are supported by a team of computer researchers: Chris Branton, Shantenu Jhu, Sharath Maddineni, Jeff Modell, Cornelius Toole, Brygg Ullmer, Ole Weidner and Michael Straus.

A key role the researchers play is coming up with ways to allow for quicker transitions between songs, a big problem at the beginning, Beck said.

"Instead of taking 20 minutes, it takes us 20 seconds now," Beck said.

Although it's called a laptop orchestra, it's more of a mobile computing ensemble.

"When we say laptop orchestra we're really referring to any kind of mobile device, and mobile has gone beyond just the laptop," Beck said.

The musicians are also creating new instruments, for instance, the "gua," a product of a LSU 2009 class that was the genesis of the laptop orchestra.

"The idea was to capture real audio as it's happening, and then have somebody else manipulate it as it's happening," Beck explained.

The orchestra uses the "gua" to great effect on the song "Improvisations & Transformations." While three students played a flute, a saxophone and a French horn, three other students stood behind them with iPads, capturing their sounds and recycling them into new sounds.

Albert, an LSU doctorate student, shows off the iPad interface that is the face of the "gua." A jazz musician, Albert said, he has long played trombone to support his "computer music habit."

"Our goal is to create an organic music experience," he said. "And part of doing that is designing the instruments in a way that they behave intuitively."

The orchestra held its first full concert in spring 2010. It now has a repertoire of 14 songs.

In January, it went on a four city tour. On March 15, it played in LSU's Free Speech Alley. And on Thursday, it is planning an informal gig at Highland Coffees, next to LSU.

The music itself ranges from accessible to experimental, structured to unstructured.

"It's sounds organized in ways that people aren't used to hearing them," Albert explained. "But they're not particularly strident, harsh, offensive sounds in and of themselves."

"We're working on songs that have offensive sounds," Beck quipped.

One example of an unusually organized piece is called "In Twerp," composed by grad student Lindsey Hartman. It sets up a bed of droning sounds on top of which the players play programmed musical scales.

"I took a (Indian) raga scale I had found and changed it up a bit," Hartman said. "It changes constantly. There's no specific beat to it."

Beck said while the orchestra generates excitement, it also produces confusion.

"People, they hear the name laptop orchestra and they think, 'That's really cool,' and they just stop. They have no idea what we really do,'" Beck said.

In some ways, the orchestra is not sure what it really does or what it's going to do next.

Grad student and researcher Straus said he plans to program robots to play music with the humans. Other ideas being considered include more digital media, incorporating more acoustic instruments into the mix, dancing and having the audience contribute music through their smart phones. The possibilities for future laptop orchestra pieces go on and on.

"The amount of flexibility the computer gives us almost forces us to rethink from the ground up how music is made," said Beck.

Pats on the back:

- Xin Li received a PFUND award from the Board of Regents titled "Surface and Volumetric Matching for Forensic Facial Reconstruction from Incomplete Skulls." This award is for $10,000 for one year.

- Qin Jim Chen received an award from the Dauphin Island Sea Lab titled "Wave and surge simulations for spilled-oil redistribution by Gulf of Mexico tropical cyclones." The award is for $45,000 for 13 months.

- Thomas Sterling was invited to chair a panel at the Newport HPCC Conference on the topic of the DARPA UHPC Program on March 29, 2011. Sterling gave an introduction to the UHPC Program followed by briefings by representatives of the four sponsored projects. He was also invited to give an address at the conference, titled “Constraint-based Synchronization for Extreme Scale Execution” and discussed the impact of lightweight synchronization constructs such as dataflow and futures for efficiency and scalability using runtime dynamic adaptive control.

CCT Spotlight:

Jim Lupo

Jim Lupo is the High Performance Computing User Services Manager at LSU, a joint effort between the CCT and Information Technology Services to create a central gateway to the high performance computing resources and expertise of LSU. He has over 30 years of experience in high performance computing and computational physics, dating back to CDC 6600 and 7600 machines and the Cray-1. The last 20 of those years, he has concentrated on parallel processing.

Jim's work has ranged from the study of radiation impacts on astrophysical accretion flows, MHD simulation of plasma implosions, to protein folding models. He completed a 20-year career with the United States Air Force, and spent 9 years working as a consultant to the Air Force Materials Laboratory. Prior to joining LSU, Jim spent 6 years in private industry. Since 2001, he has served as an affiliated faculty member with Regis University in Denver, Colorado.

Some of Jim's other interests, besides his research, include his grandkids, digital photography, computers in general, and his three, slightly psychotic, cockapoo’s (a cross breed dog between a Cocker Spaniel and a Poodle.)

CCT in the News:
Preoccupied with Exascale
Source: HPCwire

Please Note:

- National Student Employment Week will be celebrated April 10-16, 2011.

- The Office of Human Resource Management (HRM) is holding Annual Enrollment for employee benefits (health, dental, vision, flexible spending accounts, and premiums only plan) from April 1, 2011 - April 30, 2011. Employees are encouraged to review all benefits and make selections/changes consistent with your individual needs. Annual Enrollment updates, information and forms can be found at http://www.lsu.edu/benefits.

- Due to the overwhelming response, we have opened a second session for the Alice in Computation Land Summer Camp July 18-22, 2011, sponsored by the LSU Center for Computation & Technology. The camp is a five-day workshop for girls entering grades 6-8 who are interested in learning more about computational science and technology. For more information and to register, visit http://www.cct.lsu.edu/CampAlice

- Registration is now open for "Stop Motion Summer Camp," July 11-15, 2011. This exciting summer education opportunity offers high school students a unique opportunity to build upon their interests in animation. Registration fee is $125. For more information and to register, visit http://www.cct.lsu.edu/StopMotion

- CCT will host for the first time the LSU iOS Application Boot Camp August 1-12 (10 day camp; not including weekends) on the LSU Campus. This new educational experience offers LSU incoming freshmen the opportunity to gain knowledge while enhancing their entrepreneurial spirit. Participants will work in groups to create their own operating App and have it loaded on their personal device by end of camp. Included is post-camp assistance for personal or partnership development. Registration fee is $300. Visit http://www.cct.lsu.edu/iosbootcamp for more information.

- Applications for the SC11 Student Volunteer Program will open April 1 and close on August 12, 2011. Undergraduate and graduate students are encouraged to apply as volunteers to help with the administration of the conference. In exchange for volunteering, they will receive complimentary conference registration, housing, and most meals. In addition, limited support will be provided for transportation expenses (such as airfare) for international students and students from groups that traditionally have been underrepresented in HPC. For more information visit http://sc11.supercomputing.org/?pg=studvol.html or email student-vols@info.supercomputing.org.

- Prior approval is required for Special Meal Requests. Employees who make meal purchases without prior approvals may find that they must cover the cost of any monies spent for an unapproved event out of pocket, especially now that state funds are under a spending freeze. Please contact Susie Poskonka (susie@cct.lsu.edu) prior to any special meal with visitor(s) to file the appropriate request for approval. Prior approval could take up to one week, so please plan accordingly.

- Please remember to send your news concerning grants, awards, conferences, or other pertinent information to CCT Event Coordinator Jennifer Claudet at jennifer@cct.lsu.edu

- Follow CCT with social media to access photos and see news, events or updated information. These pages are public; you do not need an account to view the information.
    - Facebook group : LSU Center for Computation & Technology
    - Twitter : LSUCCT
    - YouTube channel : LSUCCT

Upcoming Grant Deadlines:

Note: Please check the CCT deadline Web site, since it is updated daily.

Faculty Early Career Development (CAREER) Program
July 23 2011 10:00 am
At Least $ 400,000.00 available