

Today's crossword solution

L	A	S	S	B	A	S	A	M	M	O			
I	N	C	A	S	U	P	O	N	R	A	I	D	
S	N	O	W	S	T	R	U	E	C	U	R	E	
A	I	R	A	N	T	I	P	A	T	H	I	E	S
S	E	N	T	A	R	C	D	A	D				
	R	O	D	E	O	S	R	I	A	T	A		
A	D	M	I	N	I	S	T	E	R	O	D	O	
P	A	R	L	O	R	S	C	H	I	C	A	N	E
E	V	E	L	S	E	P	T	I	C	E	M	I	A
R	E	D	I	D	D	I	A	N	E	S			
	O	U	R	F	R	O	S	E	L	L	S		
S	T	A	N	D	O	F	F	I	S	H	Y	E	A
T	E	S	T	G	I	L	A	A	R	R	A	Y	
O	A	T	H	E	D	E	N	S	I	E	V	E	
P	R	O	S	R	O	S	S	P	O	S	E	R	

EYEDRAW

continued from page 1A

at the Grace Hopper Celebration of Women in Computing, which will be held this October in Chicago. The EyeDraw software will be unveiled Wednesday in Vienna at CHI2004, billed as a premier international conference for computer-human interaction.

Cavender and Hoselton conducted the research for the software in the University's cognitive modeling and

eye-tracking lab. Although real-time eye tracking has been linked to controlling computers before, Cavender said this is the first time eye trackers have been able to draw without scribbles, which have been the result of the eye's natural movement.

"This is one of the first applications where we've been able to control the decision between drawing and not drawing," Hoselton said.

During previous attempts to draw with the eye, Hoselton said drawing occurred wherever the user looked on the screen, which posed a technical problem referred to as the "Midas touch problem." Cavender said this problem happens when the eye tracker has no concept of "pen up or pen down." Pixels are drawn wherever the user looks on the screen, leaving the user without real control over the drawing.

However, Hoselton and Cavender found a way to give users more control by enabling the eye tracker to distinguish between intentional drawing and simple gazing.

"We're taking data from the eye tracker into the (EyeDraw) program in the form of x-y coordinates, and manipulating that data to optically draw pictures," Cavender said. "We use smoothing algorithms so that the jerky nature of eye movements doesn't appear on the screen."

Hoselton and Cavender said the process of development was methodical but went abnormally fast because they were so excited by the research.

"Just the initial steps of learning how to get the eye data into the Windows environment took one to two months; from there we were able to expand to clicking on buttons, drawing simple lines, choosing points on the screen and it just kind of evolved from there," Hoselton said. "The project was so fun we couldn't stay away from it."

Hoselton said that although preliminary tests of EyeDraw with non-disabled users have shown that the skill can be mastered in two to three minutes, it was designed to give disabled children the ability to express

themselves through drawing and develop their own creativity.

"I would just like to see our users just enjoy having the experience of joy of doing the same tasks that normal or typically developed children do," he said.


Assistant Professor of computer and information science Anthony Hornof oversaw the research and nominated Cavender for the CRA award.

"Anna's work in the field of human-computer interaction opens up the creative and scientific world to those who have been locked out," he said.

Hornof said initial tests by users have shown the possibilities of such software, which could be used by all types of disabled users and average consumers alike.


"We had a guy from IBM suggesting that there should be an eye tracker on every laptop," Hornof said.

Contact the business/science/technology reporter at stevenneuman@dailymerald.com.



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Lauren Wimer Photographer

Senior Anna Cavender watches Rob Hoselton, a University graduate, demonstrate EyeDraw, a computer program they created that uses eye movements to draw pictures. The two say the program should allow children and adults with severe motor impairments to express their creativity by allowing them to 'draw' on the computer screen.

CLARIFICATION

It has come to the Emerald's attention that the person pictured in the upper left photo on page 2B of the Travel Supplement (ODE, April 21) was rock climbing on a hazardous anchor system. This person was not affiliated with the University's Outdoor Program or Outdoor Pursuits Program, which are featured in the accompanying story.

According to Michael Strong, director of the Outdoor Pursuits Program, the safe way to configure an anchor is

to clip the climbing rope through a locking and non-locking carabiner, both of which are attached to the anchor sling. When linked together in this fashion, the rope cannot detach from the anchor slings, or rub through the anchor sling and break. It's also a good idea to tie directly into the climbing harness with the rope, rather than clipping a loop of rope into the harness with a locking carabiner, Strong said.

For more information on correct anchor practices, visit <http://opp.uoregon.edu/climbing/anchors.htm>.

CAMPUS BUZZ

Monday

- Judaic Studies Lecture, Alumni Lounge Gerlinger Hall, 4 p.m.-6 p.m. Sarah Abrevaya Stein, University of Washington history professor, discusses "Jewish Communities in Contrast: Yiddish and Ladino Cultures in the late Nineteenth and Early Twentieth Centuries."
- Portfolio Mentor Group, Room 244 (Career Center Library) Hendricks Hall, 12 p.m.-1 p.m. Joyce McCracken, Career Center, facilitates discussion of ways to create a resume or portfolio, complete the UO online application and attract the attention of potential employers.

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