ISD’s Jeff Rickel Passes Away

Our friend and colleague Jeff Rickel died on Sunday, July 6 from complications of cancer. He was 40 years old. All of ISD is saddened by this loss.

Jeff was first diagnosed with lung cancer in the middle of last year. At that time, the cancer was already in a very advanced state, and the prospects for his survival were poor. Nevertheless, he maintained an upbeat attitude throughout his illness. He did not let cancer prevent him from pursuing his research and remained active until the very end. As a result, his sudden hospitalization and death were a shock to many in ISD.

Many of Jeff’s friends and colleagues around the world responded with kind words and offers of support. Following are just a few of the many comments that we received:

“Having interacted with Jeff innumerable times, passing through many good and sometimes fun situations in several different countries, Jeff was an inspiration for all of us working in Educational Synthetic Characters.” — Ana Paiva, INESC, Lisbon.

"Jeff was one of the leaders in a community of researchers connecting AI techniques to computer graphics human models—so called 'embodied agents.' His work was seminal, and he was a rising star in this community. He will be sorely missed." —Norm Badler, University of Pennsylvania.

"Jeff Rickel was an admirable researcher and wonderful person to discuss with." —Catherine Pelachaud, University of Paris 8.

Randy Hill is collecting a digital scrapbook of images of Jeff. If you have any that you would like to contribute, please let Kathy Kurinsky <kurinsky@isi.edu> or Randy <hill@ict.usc.edu> know.

The Jeff Rickel Memorial Library Fund has been established to support the acquisition of library materials in the area of artificial intelligence and education. Please contact Kathy if you wish to make a donation. We are hopeful that this will provide ISI with an important legacy in Jeff’s name.
## Schedule of Events:

### July:
- July 4: ISI Closed: Independence Day
- July 4: Aram Galstyan’s Birthday!
- July 12: Kate LaBore’s Birthday!
- July 20: Amy Sri’s Birthday!

### August:
- August 1: Philipp Koehn’s Birthday!
- August 6: Jihie Kim’s Birthday!
- August 10: Jim Blythe’s Birthday!
- August 15: Mack Reed’s Birthday!
- August 19: Alex Fraser’s Birthday!
- August 20: Ranjit Nair’s Birthday!
- August 21: Benham Salemi’s Birthday!

### Calendar:

#### July 2003

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### August 2003

<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Jihie’s Birthday!  Mack’s Birthday!  Alex’s Birthday!  Ranjit’s Birthday!  Benham’s Birthday!*
ISD staff in the Digital Government Research Center took leading roles in organizing and presenting dg.o2003 in Boston on May 18-21. The 2003 National Conference on Digital Government Research was the largest and, by all accounts, the most successful conference in the 4-year history of the National Science Foundation’s Digital Government Program.

Keynoted by MIT Media Lab co-founder Nicholas Negroponte, the conference presented a broad, rich array of the latest multidisciplinary papers and system demonstrations from the fast-growing digital government research community.

Conference co-chairs Yigal Arens and Eduard Hovy collaborated with NSF/Digital Government Program Manager Valerie Gregg and Program Chair Peggy Agouris (University of Maine) to schedule more than 20 paper presentation sessions, panel discussions, live system demonstrations and “birds-of-a-feather” meetings that drew nearly 200 academic researchers and government IT partners to the Hyatt Hotel, overlooking Boston Harbor. They also organized fascinating field trips for the conference audience to the MIT Media Lab, Harvard University’s John F. Kennedy School of Government, and the Volpe National Transportation Systems Center.

ISD’s Mack Reed served as Communications Chair, coordinating internal and external publicity, including the conference Web site and publishing the Proceedings, and Kary Lau provided vital admin support before, during and after registration, which welcomed attendees from across the U.S. and abroad.

For coverage of the international participation, system demos and other dg.o2003 highlights, see the articles by DGRC writer Gale Holland at http://www.diggov.org/news/stories/.

For more on the Digital Government Research center, visit http://www.dgrc.org/.

For information on the Digital Government program, see http://www.digitalgovernment.org/.
TIM CHKLOVSKI
TIMC@ISI.EDU

Hi All,

I’m Timothy (Tim) Chklovski, a new Research Scientist working in Yolanda Gil’s group on Interactive Knowledge Acquisition—I’m interested in making intelligent (in some cases settling for clever and useful) systems that gather knowledge from people. My research interests span both NLP issues (lexical semantics in particular) and a variety of Knowledge Acquisition and Knowledge Representation topics.

I and my wife of 1 year, Tara, come to ISI and sunny LA (both of which we’ve been enjoying lots!) from more climatically challenged Boston. I’ve spent my undergrad and grad years there, at MIT, getting bachelor’s degrees in Math and EECS and an M.Eng and a Ph.D. in EECS (AI)—the latter with a 2-year interlude to found and run aQuery, a company that did a lot of research in document understanding and presentation of search results in a navigable fashion.

Originally, I’m from snowy St. Petersburg, Russia (and yes, still fairly fluent in that complex but phonetic language). My high school years were spent in equally snowy Minneapolis, Minnesota, where I was chasing International Math Olympiad glory (with some success).

Some of the interactive systems I’ve built can be found at:


DIMITRA PAPACHRISTOU
DIMITRAP@ISI.EDU

Where should I start? Let’s start with “Geia sou! Me lene Dimitra. Eimai ellinida.” I grew up in the country of “Hallo! Ich heisse Dimitra. Ich bin Griechin.” The study abroad program brought me one year to “Ciao. Mi chiamo Dimitra. Sono greca.” In 1998, I received my MS degree in Computer Science, and after five years of developing intelligent software systems for planning processes at airlines and airports, I arrived in time to work together with Lewis Johnson on the Tactical Language Project, where “MarHaba. Ismi Dimitra. Ana yunaniye,” will be part of my work. Oh, did I mention: “Hello. I am Dimitra. I am Greek.”

IGNACIO THAYER
THAYER@ISI.EDU

I just completed my M.S. in Computer Science at UCLA. Before that, I received my B.S. from Carnegie Mellon University. At UCLA my thesis research had to do with methods for multiple sequence alignment. Here at ISI, I am excited to be working with Daniel Marcu and Kevin Knight on the ReWrite project.

I was born in Rio, but I am not Brazilian—my family is from Chile and Panama. I speak Spanish and welcome the opportunity to practice it. I do like to get away from the computer occasionally. I like to hike, backpack, travel, snowboard, lift weights, run, bike and paint. I am also picking up surfing and kitesurfing. If anyone is ever up for any of the above, let me know! I also read a lot, mainly history and non-fiction, but also the occasional novel.

KRISTIN GHENT
KRISTIN@ISI.EDU

My name is Kristin Ghent, and I just finished my freshman year at Brigham Young University in Provo, UT. I am majoring in exercise physiology and hope to become a physical therapist. My family lives in Manhattan Beach, and that is currently where I am living for the summer. I love any kind of sport involving a board, but my passions are snowboarding and wakeboarding. I have come to ISD to help the administrative staff and anyone else who needs me, so make sure to stop by if you need anything!
### ISI’s New Center for Research on Unexpected Events (CRUE)

**By Yigal Arens**

Homeland security is one of the greatest challenges facing the United States today. In the wake of the attacks of September 11, 2001, our nation is redirecting immense resources towards improving our ability to respond to and recover from terrorist attacks.

Government agencies already have significant mechanisms in place for managing a wide range of natural and man-made disasters. However, the kinds of events being contemplated now are different. Severe new problems arise when an event occurs that is completely unexpected: when it is so rare and damaging that it outstrips preparations, plans, and human and material resources.

To address these new challenges, ISI established last September the Center for Research on Unexpected Events (CRUE). CRUE is an applied research center with the mission of building on revolutionary developments in information technology to transform the nation’s ability to respond to unexpected events. What distinguishes CRUE’s focus from more common emergency response is that CRUE concentrates on high-impact events that are unplanned for, or that outstrip existing preparations and plans. Such events are rare, but are bound to occur. While by definition it is not possible to have detailed preparations for them, CRUE emphasizes work on policies, general resources and support technologies that will apply in any extreme eventuality.

CRUE builds on ISI’s extensive relevant body of research in information technology, as well as on contacts with social scientists and engineers elsewhere at USC and at other institutions. CRUE will also build on collaborations with government agencies and first responders.

Researchers from ISI and other institutions working together under CRUE have recently submitted a variety of proposals for homeland security-related research. Topics proposed were as diverse as vehicle monitoring, reasoning and link discovery, emergency evacuation of urban regions, computer network security, decision-making environments, sensor networks, and delivery of education and training relevant to homeland security.

CRUE has been working with US government agencies and officials to create an understanding of the research issues underlying handling unexpected events and the mechanisms for conducting such work. In February 2002 at NSF’s request, Paul Rosenbloom and I organized a workshop on “Responding to the Unexpected.” CRUE was recently involved in organizing a follow-up workshop to further identify the scope and possible modalities for a national research program on the subject.

CRUE is currently headed by me with the collaboration of John Damoulakis from ISI East. Paul Rosenbloom has been working very closely with us. When Paul Cohen joins us in September (see announcement on page 15), he will take over the leadership of CRUE. I will continue working with Paul on CRUE at least initially.
As for MT, we had the first system for Hindi "up and running" in less than 24 hours after the language had been announced. Not that it was of much use — it could only translate the bible, since all the training data we had was the bible, and the version of the Hindi bible that we had comes in an encoding that is used for the bible and nothing but the bible. Nevertheless, it proved the point: Give us the data, and we'll have MT ready for you in less than a day (or two or three, if you give us lots of data). As more and more parallel data became available throughout June, we continued to build new and improved versions of the MT system. Almost all of our systems were available as soon as they had been built, through both a web interface that would mail the translations back to the submitter, and through a TCP socket that could be accessed by other programs.

Obviously, machine translation plays a pivotal role in multilingual information processing. At some point, you have to cross the language boundaries, no matter in which language you search, summarize, cluster, or process otherwise. Within the surprise language exercise, ISI took on the pivotal role of providing MT to the rest of the community. We provided bulk translations of large document collections to other participating sites (most notably the University of Maryland) and offered MT as a service via the web, both through a web submission form and a TCP socket. Two outside systems, Hindi question answering at New York University, and Breck Baldwin's alias-i, a company working on cross-document co-reference, made use of...
this socket to include ISI MT in their Hindi demo systems.

Franz Och as our local MT czar, Rahul Bhagat as the tireless data shuffler (who kept feeding the system with new data), and Lei Ding as the author of the MT web interface deserve special recognition for their contributions to this success.

In the area of summarization, Chin-Yew Lin adapted Infosqueeze’s single-document summarization engine to handle Hindi and then plugged it in ISI MT to provide English versions of the Hindi summaries (Infosqueeze.com is a company co-founded by Eduard Hovy and Chin-Yew Lin). Liang Zhou put together multidocument headline generation (which, in a nutshell, puts labels on document clusters to give you a rough idea of what they are about) for both Hindi and English. Finally, Anton Leuski integrated Liang’s headline generation into his document clustering and document space navigation tool, Lighthouse, and integrated Lighthouse with iNeATS (a joint work by Anton Leuski, Chin-Yew-Lin and Eduard Hovy). The graphics in this article show the tool in action.

All in all, the surprise language experiment gave us an incentive to put together various components that we developed at ISI over the past years and to get them to work with one another.

So what were the challenges, and what did we accomplish in this month? The good news is that we accomplished many of our objectives. We were able to adapt both our MT and our summarization technology quickly to handle Hindi, and based on our experience with Hindi, plugging in new languages won’t be much of a challenge. The big drawback, in particular with respect to MT, is the dependence on good, parallel data. Obtaining such data is a tedious and fairly boring process, and the Hindi exercise has shown that again (like we already saw in French, Chinese, Arabic, Tamil, and Cebuano). In the case of Hindi, the situation is even worse than what we encountered with other languages. Almost every single web site uses its own, idiosyncratic encoding scheme, so getting the data wasn’t enough — it also needed to be standardized. We tried to stay out of that mess as much as possible and left it to other sites to tackle the problem. In spite of the problems, after one month, people were able to retrieve, translate, and summarize Hindi documents into English. This was absolutely unthinkable five years ago.

The following people at ISI were involved in the surprise language exercise: Rahul Bhagat, Tara Chklovski, Lei Ding, Ulrich Germann, Eduard Hovy, Ashish Jain, Kevin Knight, Anton Leuski, Chin-Yew Lin, Daniel Marcu, Linda Mizushima, Kiran Meduri, Anish Nair, Doug Oard, Franz Josef Och, Deepak Ravichandran, and Liang Zhou.

Special thanks to Doug Oard, who, as University of Maryland’s envoy to ISI, turned out to be the driving force behind much that went on at ISI during this exercise. His insistence that we make available to others whatever we produced sooner rather than later helped position ISI in a prominent position during the exercise.
Shalom to you all out there! I'm a 2nd year Ph.D. student at the Hebrew University of Jerusalem, having come here for the summer to work with Kevin Knight and Daniel Marcu on a project related to question answering. Summer internships are a great way of meeting people with similar professional interests and working together, and it’s been fun so far!

I am a summer student from the University of Twente (the Netherlands). I am working with Lewis Johnson on the Social Intelligence project, and my main task is to work on polite language generation. Since I first learned about embodied conversational agents, I have been fascinated by them. Actually, the first example I saw was STEVE, so when I later got the opportunity to spend the summer here at ISI, I didn’t have to think twice. Now I am halfway through the internship, and until now it has been a really great experience for me.

I’m Matthew Ho, currently a graduate student at USC, and am working here for Craig Knoblock on a project that simulates train movement by retrieving and integrating information from the Web. I look forward to knowing more people from ISD, and if you are interested in Hong Kong or my project here, feel free to talk to me.

Mark Hopkins is visiting ISI this summer as a research assistant, working with Kevin Knight and Daniel Marcu on syntactic approaches to machine translation. Mark has just completed the third year of the Ph.D. program in computer science at UCLA under the advising of Professor Judea Pearl. His research focuses on causal and probabilistic representation and reasoning.

Hi, my name is Edward, and I’m currently an undergrad at USC. I am a senior, majoring in computer science and will be graduating next spring, in 2004. I’m currently working on the DOCKER system at ISI, and my general task is to improve and build upon the current system that we have running. When I’m not at work, I usually spend my time writing, playing sports or volunteering my time to church, and of course spend time with friends too! :) I’m always open to make new friends or meet new people, so feel free to drop by my office or say hi if you see me pass by.

John Lee is a graduate student in the Spoken Language Systems group at MIT. He is spending this summer with Tim Chklovski and Yolanda Gil in the Interactive Knowledge Capture group, working on the natural language processing aspects of the Trellis project.

I’m in the Master’s program in Computer Science at USC. I came to ISI this summer from down the street (ICT), where I was working on language representations of commonsense concepts. I’ll be dealing with natural language problems like decipherment, dialog, etc. with Kevin Knight. Research interests include machine translation, corpus linguistics and knowledge representation.

I am a senior Computer Science major at Harvey Mudd College, specializing in Software Development and Graphics. I am working at ISI under Professor Johnson on the Tactical Language Project, as a level designer and interface developer. I like anime and to Lindy Hop in my free time.
NISHIT RATHOD
NRATHOD@ISI.EDU  
Room 960

I’m Nishit Rathod, a student at USC, completing an MS in Computer Science. The funny part is that I started with a focus on Computer Networks (soon I’ll be switching to general CS), having taken two Systems courses in my first semester (Fall 2002). But things changed when I sat in for a CSCI 562 class (Kevin’s course) in the Spring. I was fascinated and started working with Kevin on a Decipherment project and have been working on it since. Automatic Character-Code Conversion is what we are working on right now.

SID SHAW
SIDSHAW@ISI.EDU  
Room 951

Hi there! This is Siddharth (Sid) Shaw. I am a graduate student studying Computer Science (Software Engineering and AI) at the University of Southern California (USC). I also did my bachelors at USC in Computer Engineering and Computer Science. I was born and brought up in Kuwait and hence the love for Soccer. Apart from soccer, school and work, I can usually be found near happy hour or some Unreal Tournament server or both. I have worked for several corporate companies during my undergrad years and have to admit that I am very impressed by the work atmosphere at ISI. The fine location doesn’t hurt either. At ISI, I am working for Yolanda Gil and Jihie Kim in the i-Knowledge-Capture group. I can be found in 951, so feel free to drop by for some soccer news, happy hour hang outs, gulf war stories, information about CS at USC, gaming or just information about my project and what I’m doing at ISI.

VON-WUN SOO
VWSOO@ISI.EDU  
Room 950

Hi! my name is Von-Wun Soo. I am a professor from National Tsing Hua University in Taiwan. I am working with Lewis Johnson on Intelligent Agents. I brought my family (my wife and three kids) with me for the summer. Perhaps I should spend more time with them at Disneyland, Universal Studios, the beaches, etc. rather than staying at ISI.

KEITH STEVENS
KSTEVENS@ISI.EDU  
Room 949

I am working for the summer with Dr. Lewis Johnson on the Tactical Language project. I’ll be working with Tatsuya Oiye to modify the Unreal Tournament 2003 game engine to create a tactical language training scenario. I am an undergraduate Computer Science major at Harvey Mudd College.

LARA TAYLOR
LARA@ISI.EDU  
Room 948

Hi, my name is Lara Taylor. I’m here for the summer, working with Kevin Knight and Daniel Marcu on modeling discourse coherence. I’m visiting here from UC-San Diego, where I’m working on my Ph.D. in the linguistics department. You can find out more about me by visiting my website at http://ling.ucsd.edu/~ltaylor.

DAN WU
DANWU@ISI.EDU  
Room 951

I am pursuing my Ph.D. degree at the University of Maryland, College Park. I am here at ISI for a 3-month internship. Here at ISI, I am working with Jim Blythe on task composition in the computational grid environment. This topic is very interesting and is very related to my Ph.D. work.

FAN YANG
FANYANG@ISI.EDU  
Room 949

Happy to be in Los Angeles. I am a second-year Ph.D. student in the Oregon Graduate Institute at the Oregon Health & Science University. I am here as a summer student working with Prof. Lewis Johnson on the ESPEECH project. My research interests include speech and language processing (http://www.cse.ogi.edu/~yangf).

RONGGANG YU
RONGGANG@ISI.EDU  
Room 951

I’m a Ph.D. student at the University of Texas at Austin, and came here to do a summer internship. My research advisors are Jim Blythe and Yolanda Gil. My project is about investigating applications of planning and knowledge representation for the computational Grid.
The weather is heating up, and ISDers are dreaming of the beach. Have you seen these summery items floating around the offices here at ISI? See if you can figure out where you’ve seen these. Stumped? The answers are on page 16.
When Congress passes a law, that’s only the beginning. Government personnel in the appropriate agency write a collection of rules (called Regulations) to spell out the law’s details as specifically as needs to be. This process takes a lot of time and expertise. Also, it takes input from the country: during the regulation writing process, by law, the writers have to make available the draft and have to read each comment that is returned to them by the US citizenry (whether it’s an email message from a pressure group of thousands, or a thousand-page book from a large corporation with an interest).

The funded contract is to perform a small amount of research to explore the feasibility of using Natural Language technology to help at various stages of the rule-writing process: to find relevant information and other rules, to classify and summarize people’s comments, and to collect and record the effects of the rules (court cases, subsequent laws, etc.). This project is joint with language technology researchers at Carnegie Mellon University and social science/policy researchers at Drake and San Francisco Universities.

The new grant supports building a new website and online toolset for the growing nationwide digital government research community at www.digialgovernment.org; publishing the monthly dgOnline newsletter; retooling ISI’s Digital Government Research Center’s website; and organizing the 2003 annual National Conference on Digital Government Research, including handling publicity, organizational communication and print and multimedia publications for it.

The objective of this project is to develop tools to support individualized language learning, and to apply them to the acquisition of tactical languages: subsets of linguistic, gestural, and cultural knowledge and skills necessary to accomplish specific missions.

In order to maximize learner motivation and give learners effective practice opportunities, learners will practice on acquiring vocabulary items and recognizing gestures and then apply them in simulated missions, where they interact with avatars and virtual characters. The training system enables learners to communicate directly with on-screen characters using a speech input interface. Our objective is to make the toolset easily applied to new tactical languages, missions, and training contexts. Our first target language is Levantine Arabic.

The goal of OnTo-Agents is to establish an agent infrastructure for the Semantic Web, based on metadata and ontology standards developed by the World Wide Web Consortium (W3C). Onoagents will develop scalable storing, querying, and reasoning infrastructure for DAML+OIL/OWL ontologies, reasoning techniques for handling multiple modeling languages (like ER, UML, TopicMaps), components for ontology based service discovery for Semantic Web services, and tools for the creation of annotation of services. The project is a collaboration between ISI, Stanford University and the University of Karlsruhe.

The funded contract is to perform a small amount of research to explore the feasibility of using Natural Language technology to help at various stages of the rule-writing process: to find relevant information and other rules, to classify and summarize people’s comments, and to collect and record the effects of the rules (court cases, subsequent laws, etc.). This project is joint with language technology researchers at Carnegie Mellon University and social science/policy researchers at Drake and San Francisco Universities.

The new grant supports building a new website and online toolset for the growing nationwide digital government research community at www.digialgovernment.org; publishing the monthly dgOnline newsletter; retooling ISI’s Digital Government Research Center’s website; and organizing the 2003 annual National Conference on Digital Government Research, including handling publicity, organizational communication and print and multimedia publications for it.

The objective of this project is to develop tools to support individualized language learning, and to apply them to the acquisition of tactical languages: subsets of linguistic, gestural, and cultural knowledge and skills necessary to accomplish specific missions.

In order to maximize learner motivation and give learners effective practice opportunities, learners will practice on acquiring vocabulary items and recognizing gestures and then apply them in simulated missions, where they interact with avatars and virtual characters. The training system enables learners to communicate directly with on-screen characters using a speech input interface. Our objective is to make the toolset easily applied to new tactical languages, missions, and training contexts. Our first target language is Levantine Arabic.

The goal of OnTo-Agents is to establish an agent infrastructure for the Semantic Web, based on metadata and ontology standards developed by the World Wide Web Consortium (W3C). Onoagents will develop scalable storing, querying, and reasoning infrastructure for DAML+OIL/OWL ontologies, reasoning techniques for handling multiple modeling languages (like ER, UML, TopicMaps), components for ontology based service discovery for Semantic Web services, and tools for the creation of annotation of services. The project is a collaboration between ISI, Stanford University and the University of Karlsruhe.

The funded contract is to perform a small amount of research to explore the feasibility of using Natural Language technology to help at various stages of the rule-writing process: to find relevant information and other rules, to classify and summarize people’s comments, and to collect and record the effects of the rules (court cases, subsequent laws, etc.). This project is joint with language technology researchers at Carnegie Mellon University and social science/policy researchers at Drake and San Francisco Universities.

The new grant supports building a new website and online toolset for the growing nationwide digital government research community at www.digialgovernment.org; publishing the monthly dgOnline newsletter; retooling ISI’s Digital Government Research Center’s website; and organizing the 2003 annual National Conference on Digital Government Research, including handling publicity, organizational communication and print and multimedia publications for it.

The objective of this project is to develop tools to support individualized language learning, and to apply them to the acquisition of tactical languages: subsets of linguistic, gestural, and cultural knowledge and skills necessary to accomplish specific missions.

In order to maximize learner motivation and give learners effective practice opportunities, learners will practice on acquiring vocabulary items and recognizing gestures and then apply them in simulated missions, where they interact with avatars and virtual characters. The training system enables learners to communicate directly with on-screen characters using a speech input interface. Our objective is to make the toolset easily applied to new tactical languages, missions, and training contexts. Our first target language is Levantine Arabic.

The goal of OnTo-Agents is to establish an agent infrastructure for the Semantic Web, based on metadata and ontology standards developed by the World Wide Web Consortium (W3C). Onoagents will develop scalable storing, querying, and reasoning infrastructure for DAML+OIL/OWL ontologies, reasoning techniques for handling multiple modeling languages (like ER, UML, TopicMaps), components for ontology based service discovery for Semantic Web services, and tools for the creation of annotation of services. The project is a collaboration between ISI, Stanford University and the University of Karlsruhe.

The funded contract is to perform a small amount of research to explore the feasibility of using Natural Language technology to help at various stages of the rule-writing process: to find relevant information and other rules, to classify and summarize people’s comments, and to collect and record the effects of the rules (court cases, subsequent laws, etc.). This project is joint with language technology researchers at Carnegie Mellon University and social science/policy researchers at Drake and San Francisco Universities.

The new grant supports building a new website and online toolset for the growing nationwide digital government research community at www.digialgovernment.org; publishing the monthly dgOnline newsletter; retooling ISI’s Digital Government Research Center’s website; and organizing the 2003 annual National Conference on Digital Government Research, including handling publicity, organizational communication and print and multimedia publications for it.

The objective of this project is to develop tools to support individualized language learning, and to apply them to the acquisition of tactical languages: subsets of linguistic, gestural, and cultural knowledge and skills necessary to accomplish specific missions.

In order to maximize learner motivation and give learners effective practice opportunities, learners will practice on acquiring vocabulary items and recognizing gestures and then apply them in simulated missions, where they interact with avatars and virtual characters. The training system enables learners to communicate directly with on-screen characters using a speech input interface. Our objective is to make the toolset easily applied to new tactical languages, missions, and training contexts. Our first target language is Levantine Arabic.

The goal of OnTo-Agents is to establish an agent infrastructure for the Semantic Web, based on metadata and ontology standards developed by the World Wide Web Consortium (W3C). Onoagents will develop scalable storing, querying, and reasoning infrastructure for DAML+OIL/OWL ontologies, reasoning techniques for handling multiple modeling languages (like ER, UML, TopicMaps), components for ontology based service discovery for Semantic Web services, and tools for the creation of annotation of services. The project is a collaboration between ISI, Stanford University and the University of Karlsruhe.
Military and civilian personnel are frequently assigned missions that require them to communicate effectively with speakers of other languages. They, thus, require knowledge of the local culture, language and norms of face-to-face communication. Machine translation tools can help, but are not a substitute for knowledge of culture and language. Unfortunately, adult learners often find it difficult to acquire even a rudimentary working knowledge of a foreign language. The ability of a learner to master these skills depends on their individual background, aptitude and motivation.

The objective of this project is to develop tools to support individualized language learning and to apply them to the acquisition of tactical languages: subsets of linguistic, gestural and cultural knowledge and skills necessary to accomplish specific missions. In order to maximize learner motivation and to give learners effective practice opportunities, learners will practice acquiring vocabulary items and recognizing gestures and then apply them in simulated missions, where they interact with avatars and virtual characters. The training system enables learners to communicate directly with on-screen characters using a speech input interface. Our objective is to make the toolset easily applicable to new tactical languages, missions and training contexts.

Our planned technical solution includes the following components:

- A computer-based language training system for multiple Middle Eastern languages, employing pedagogical agents, virtual humans, and game elements.
- An authoring tool that facilitates the creation of specialized language exercises and curricula, sequenced automatically based on learner performance.
- Techniques for immediate detection of speaker dysfluencies and other problems requiring feedback and remediation.
- Tools for tracking learner focus of attention, fatigue, and effort, employing vision techniques, and for inferring learner motivation.
- Software for managing interactive mission scenarios, and for controlling the behavior of animated characters within those scenarios, in order to promote learning goals.
- Tools for training natural language processing tools rapidly on new tactical languages, from example scenarios.

This work is a collaboration between CARTE, the Natural Language Group, speech and vision researchers at ISI and on campus, and language learning tool developers at Micro Analysis and Design.

---

**Invited Talks**

**Speaker:** Lewis Johnson

**Invited talk at:**
AAMAS 2003 (The Second International Joint Conference on Autonomous Agents and Multi-Agent Systems)

**Title:**
Synthetic Agents as Social Actors

**Abstract:**
Social psychologists such as Reeves and Nass have argued that people tend to relate to media much as they relate to human beings. Animated synthetic agents have been developed to exploit this tendency. Such agents raise expectations that they can function as social actors—able to engage in social interactions with people and other agents. This presentation will describe efforts at enabling synthetic agents, particularly pedagogical agents, to interact in a manner that is sensitive to social expectations and conventions. The social intelligence that this requires is of practical value in promoting learner motivation and engagement. Finally I will discuss efforts to enable agents to act in a dramatic sense—to portray roles and to convey emotion. This is an essential part of human social interaction, which often involves the portrayal of roles. And the application of theatrical principles to agent behavior results in agent behavior that is more consistent and understandable, and user experiences that are more engaging.

---

**Invited talk at:**
AIED 2003 (The International Conference on Artificial Intelligence in Education)

**Speaker:** Lewis Johnson

Lewis has been asked to give an invited talk at AIED 2003, in part to honor Jeff Rickel and in part to talk about other research at CARTE.
ISD Journal Publications (2002–03)


Latifur Khan, Dennis McLeod & Eduard Hovy. "Retrieval Effectiveness of an Ontology-Based Model for Information Selection." Journal for Very Large Data Bases (VLDB) (To appear).


A Conversation with Graduate Student Jay Modi

Jay Modi with Herb Schorr. Jay was awarded a Meritous Service Award in June, for his dedicated work as the organizer of the AI-Grads Group.

Jay: Many of the people here at ISI have probably never met you. Would you like to take this opportunity to say anything?

Herb: I’ve met almost all the permanent staff. That’s one thing I do religiously. My feeling about the proper way to run a research institution is that you don’t want layoffs. It’s bad for morale. So I want to meet everyone, make sure they are good for the institution.

Jay: You’ve had a long and very successful career: Ph.D. in Electrical Engineering from Princeton, Postdoctoral Fellow at Cambridge University, Assistant Professor at Columbia University, Vice President of Research at IBM and now Executive Director of ISI. What has been the key to your success?

Herb: So one talent I seem to have is a talent for research management. My senior year in college on my way to graduate school I went to work for ITT laboratories, and by the end of the summer, I had ten people working for me, which is hard to do. I still haven’t quite figured out what happened there. I think it was because the guy I worked for was a lousy manager.

Jay: Is that why you decided to focus your career on research management instead of staying in academia?

Herb: I was always interested in systems. Back then, and still today, that was not the easiest way to get tenure. You needed to write four papers a year, and I was doing that, but not on the topics I liked. So I guess one piece of advice would be to make sure to get your teeth into something you really like and have talent for. That’s rather a trivial piece of advice, but important.

Jay: Perhaps arguably one of your greatest accomplishments was as one of the fathers of the RISC computer architecture. Could you tell me more about how that came about?

Herb: The RISC architecture was developed at IBM between 1965 and 1968. Again, it happened very quickly once I came to IBM that I started having people work for me, and I became the manager of the RISC architecture. While at Yorktown, I wrote the principles of architecture manual, and then I ran the Architecture Department and later, Architecture and Programming. During that time, I co-invented a lot of the RISC, but once I understood it and the principles behind it, that was it. John Cocke, a very brilliant guy, spent the rest of his life working on it because it was one of his interests, but my mind couldn’t do it. It would be a bore. I like new things. That can be good and bad.

Jay: What else have you done in research?

Herb: During my year at Cambridge I co-invented Schorr-Waite-Deutsch, the fastest known algorithm for garbage collection, at least according to Knuth. But I found I liked to work on multiple things at once, multi-task. I’m more productive that way. So, rather quickly I got out of research... although I did do research at IBM.

Jay: When is the last time you wrote a line of code?

Herb: About 40 years.

Jay: Executive Director of ISI seems like an important but mysterious job. So what is the job of Executive Director?

Herb: My job is to worry about the Institute as a whole in terms of what areas we should be getting into that fall between the cracks of the divisions. When I got here, there were a lot of missing skills in the broad systems area, and I’ve been slowly filling them over the years. The point of that is we can then begin going after the research contracts in those areas. For example, we just hired Paul Cohen to augment our Homeland Security area. So, I make a lot of decisions like that.

Jay: What do you do on a daily basis?

Herb: What does my day really consist of? I have meetings about new projects, I make decisions on personnel, salary and financial issues. I now have duties on main campus with Distance Education and the High Performance Computing Center, so I get updates, make decisions and set strategic directions for those. I also have ceremonial duties. For example, Microsoft comes to visit, and somebody has to tell them about USC and ISI. That requires putting together overview presentations of ISI. I attend conferences, read papers and books in areas I think might be possible new areas for ISI. I also often have lunch meetings with members of ISI to stay in touch.

Jay: Do you usually go out for lunch?
Interview with Herb Schorr, continued

Herb: Yes. Although eating in would be better for maintaining my boyish figure.

Jay: What is your favorite restaurant for lunch around ISI?

Herb: None of the above. There is nothing really worthy of mention. We could do with a good Indian restaurant around here, though.

Jay: What’s your favorite type of music? Hip-hop?

Herb: No, mostly classical music. I guess it’s a generation gap. Although I knew Madonna before she was Madonna...how’s that? My wife and I were art collectors, and there was this graffiti artist named Jean-Michel Basquiat. We were his earliest, first and largest collector, while he was alive. He dated Madonna, so I used to party with Madonna. I also knew other interesting people like Andy Warhol and the beat poets Allen Ginsberg and William Burroughs.

Jay: No kidding, who would have guessed? How old are you?

Herb: 67.

Jay: How long do you plan to stay at ISI?

Herb: Until they kick me out or wheel me out on a stretcher.

Congrats and Good Luck Jay!

Jay Modi received an ISI Meritorious Service Award for his work during his years here with the AI-Grads, the group of CS GRAs supported by ISD.

Jay planned outings for the AI-Grads, created a group web page and e-mail list, coordinated group activities at division retreats, set up research reading groups, and wrote articles about the AI-Grads for The InSiDer.

Jay engaged in these activities on his own time, because he wanted to give ISD graduate students a voice and bring ISD closer together. He succeeded. As a result of his efforts, ISD is a more hospitable place for students, they are better represented in division affairs, and they are better informed about activities in ISD and in ISI, in general.

Jay will be graduating soon, and he will be missed. Deepak Ravichandran will be taking over the AI-Grads group when Jay leaves.

New Additions to ISD

•We’re happy to announce that Paul Cohen will be joining ISD in September! Paul is currently Professor of Computer Science at the University of Massachusetts, Amherst, where he has been for the past 20 years. He is a Fellow of the AAAI. When Paul joins ISI he will serve as Deputy Director of our division, in addition to Ed Hovy, and will take over as Director of the Center for Research on Unexpected Events (CRUE). Paul’s Ph.D. is from Stanford University in Computer Science and Psychology (1983); his MS and BA degrees in Psychology are from UCLA and UC San Diego, respectively. At U. Mass, Paul directed the Experimental Knowledge Systems Laboratory. Paul’s projects include Capture the Flag, a war-gaming environment; and the Robot Baby project, in which a robot learns representations and their meanings sufficient for natural language and planning. Time is a central theme in Paul’s work: Sequences and series are interesting, algorithmically; much of what we know about the world is learned by observing dynamics; and linguistic constructs such as manner seem to be rooted in the way situations change. Paul believes that AI has been state-based for too long and that it is time to attend to dynamics. Paul also lectures and writes on empirical methodology. He wrote “Empirical Methods for Artificial Intelligence,” a textbook published by MIT Press in 1995. Other books include Volumes III and IV of “The Handbook of Artificial Intelligence” with Edward A. Feigenbaum and Avron B. Barr; and “Advances in Intelligent Data Analysis” with Xiaohui Liu. Paul has published more than 100 articles on various aspects of Artificial Intelligence.

•Carole Beal will be joining CARTE in September, working with Lewis Johnson on integrating animated pedagogical agents into adaptive teaching systems and developing K-12 education initiatives. Carole is on leave from the University of Massachusetts-Amherst where she has been designing and evaluating intelligent tutoring systems for K-12 mathematics. Her current project, supported by the National Science Foundation, is Wayang Outpost, a web-based intelligent tutor that integrates high school math and environmental biology. The Wayang site represents a fictitious research station in Borneo, populated by characters based on actual researchers and scientists who study endangered species and environmental threats. Students who work with Wayang receive tutoring in SAT-level math problems via animated Flash movie files that are individually customized in real time to enhance learning. Transfer of learning is assessed through performance on multi-step, challenging math problems integrated into Flash movie “adventures” involving a specific environmental threat (e.g., illegal logging of the rainforest) and led by a scientist character. Evaluation studies in two school districts in Spring 2003 showed that students who worked with Wayang significantly improved their scores on a mock SAT Math exam.
Congratulations to Greg Barish for successfully defending his Ph.D. thesis. Greg is still interviewing and doesn’t know what to do with his life yet.

Tim Chklovski is co-organizing a workshop in conjunction with K-CAP 2003, Distributed and Collaborative Knowledge Capture (DC-KCAP). For more information on the workshop, visit: http://www.isi.edu/~timc/dc-kcap/index.html

Farewell to Abdessamad Echihabi, who returned to Morocco after working at ISI for a year and completing a Masters degree at USC on a Fulbright Scholarship. You can reach Abdessamad at aechihabi@hotmail.com.

Congratulations to Lewis Johnson, who was nominated for a World Technology Network Award in the field of Education. The World Technology Awards are presented each year to the outstanding innovators from each sector within the technology arena.

Congratulations to Chin-Yew Lin, who recently added to his family! Chin-Yew’s son, Daniel, was born on April 11, and weighed in at 8.2 lbs and 22 inches! Mother, father and son are all happy and doing well.

Congratulations Kristina Lerman, who was promoted to Project Leader status, effective July 1!

Congratulations Stacy Marsella and Jeff Rickel! The paper Negotiations over Tasks in Hybrid Human-Agent Teams for Simulation-Based Training by David Traum, Jeff Rickel, Jonathan Gratch and Stacy Marsella received the Best Innovative System/Application Paper Award at the AAMAS 2003 conference in Melbourne.

Congratulations to Jay Modi, who recently successfully defended his Ph.D. thesis. Jay will be at ISI until end of July. In the fall, He’s going to Pittsburgh for a Post-Doctoral Fellowship at Carnegie Mellon University and will be working with Maneula Veloso there.

Ion Muslea has left ISI and joined the Representation and Reasoning Group at SRI International, where he’ll be working on learning procedural knowledge and on the EPCA’s (Enduring Personalized Cognitive Agent) learning thrust at SRI. You can still reach Ion at his ISI email until September.

Congratulations Behnam Salemi! Behnam successfully defended his Ph.D. thesis in June and is currently finishing up his thesis writing and looking for a job. He will be leaving ISI by the end of summer. After that, you can reach him at behnamsalemi@yahoo.com.

Carl Kesselman and Lewis Johnson at the World Technology Award Gala. Carl was a finalist in the Software category.

Stacy Marsella and David Traum, after winning their award at AAMAS.

Chin-Yew’s new baby, Daniel.

The InSiDer
A Quarterly Publication of the Intelligent Systems Division
http://www.isi.edu/~d3admin/insideronline

Information Sciences Institute
4676 Admiralty Way #1001
Marina del Rey, CA 90292
Phone: 310-448-8657
Fax: 310-822-0751

Edited by: Kathy Kurinsky