Recognizing speech: communicating with computers

John Toon
Research News

When the motion picture "2001: A Space Odyssey" opened in 1968, a conversation between an astronaut and a computer named HAL seemed plausible for the year 2001 — then more than three decades in the future.

But as any user of today’s automatic speech recognition technology can attest, that future hasn’t quite arrived yet.

As a scientist at AT&T Bell Labs, B.F. “Fred” Juang helped create the current generation of speech recognition technology that routinely handles “operator-assisted” calls and a host of other simple tasks, including accessing credit card information.

Proud of that pioneering work, Juang today is helping to create the next generation of speech technology — one that would facilitate natural communication between humans and machines.

Now a professor in the School of Electrical and Computer Engineering, Juang presented his vision of next-generation speech systems last month at the annual meeting of the American Association for the Advancement of Science (AAAS).

"If we want to communicate with a machine as we would with a human, the basic assumptions underlying today’s automated speech recognition require an effort to understand and harness the factors and dynamics that promote innovation, enabling the United States to move to the next rung on the economic ladder."

Despite snowfall that morning, the initial NII meeting drew 125 national experts from academia, industry, government and economic think tanks. They were organized into seven working groups, each of which was assigned a specific aspect of innovation, ranging from research to venture capital funding, from innovation markets to the skills that innovation requires. Provost Jean-Lou Chameau is chairing the working group on innovation frontiers, and a half-dozen Tech professors are participants in the groups.

During the remainder of 2004, the seven groups will meet both physically and virtually using collaborative web-based software developed by IBM to share data, conduct discussions and hammer out recommendations for action. Their collective efforts will be presented at a national summit on innovation in December, which will be followed by a written report.

Last stand...

The Georgia Tech campus proved to be a popular spot for rallying support behind Democratic presidential hopefuls this election season. With both retired Gen. Wesley Clark and Rep. Dennis Kucinich already having stumped here, Sen. John Edwards met with hundreds of boosters at the Georgia Tech Hotel and Conference Center on the evening of the Super Tuesday primaries last week.

Edwards proved to be the party’s second choice, however. He ended his campaign the following day, having accumulated a total of 506 delegates.

President Clough leads national economic growth initiative

Sarah Eby-Ebersole
Institute Communications and Public Affairs


The goal of the NII, co-chaired by President Wayne Clough and IBM Chairman and CEO Sam Palmisano, is to develop a national action-oriented agenda designed to create a fertile economic environment for innovation.

“The United States has long enjoyed a competitive economic edge,” Clough explained, “but we must now compete in a global economy in which competitors like China and India are emerging to challenge us. Our success will be based on our ability to create innovative products and services at the highest end of the economic spectrum.

The focus of innovation is on ideas, collaboration and expertise, according to Clough and Palmisano. Innovation produces the concepts and the context that put inventions to maximum use. It often emerges at the intersection of technology with business and the marketplace, applying insight to new technology to generate new solutions that address market needs.

History demonstrates that there are times, places and conditions in which innovation flourishes. The NII represents an effort to understand and harness the factors and dynamics that promote innovation, enabling the United States to move to the next rung on the economic ladder."

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Parent makes commitment to benefit women students

Marla Edwards
Institute Communications and Public Affairs

As the single parent of a Georgia Tech student, Beverly Kitaoka knows firsthand the importance of supporting women in technology fields. Recently, she made a $50,000 financial commitment to the Women’s Resource Center and to establish an endowed scholarship for women in the College of Computing.

Kitaoka is the mother of two daughters: Michelle, a junior in the College of Computing, and Tiffany, an engineering student at the University of Florida. A senior vice president with Science Applications International Corporation (SAIC), she was the first woman to become a senior executive in a corporation that produces simulation systems for the military.

She worked as an engineer before getting into management with SAIC and holds a bachelor’s degree in mathematics and a master’s in computers, information and control engineering from the University of Michigan.

“I think it’s something that’s so important for women,” she said. “It’s a challenging world because there are so few women in the field.”

Yvette Upton, assistant dean of students and director of the Women’s Resource Center, said Kitaoka’s gift will be a great boost. “This will help us make an impact on the lives of women students and keep them here at Tech. Not only is Beverly Kitaoka a generous parent, but she’s also a wonderful role model for young women in technology.”

Kitaoka’s commitment also will endow a scholarship for women in computing, and she will join the College’s Diversity Advisory Board. “We were so pleased about Ms. Kitaoka’s commitment to women’s scholarships and about her decision to give her time to the College. Her expertise will be invaluable to our efforts to address the under-representation of females and try to discover ways that we can attract and retain women students,” said Maureen Biggers, the College’s assistant dean for diversity and special programs.

The professions are still more geared to men, who have help at home, a built-in network and plenty of mentors available, Kitaoka said.

“We really need more women in these roles. I would like for things to be better for my daughters. I’d like for them to not have some of the struggles and frustrations and feelings of being ignored and held back that I’ve had.”

With all of her success in business and public service, Kitaoka said being a mother to her two daughters has been first priority. “That’s probably the most important job I’ve ever done and the one that makes me the most proud,” she said.

Meanwhile, she hopes her support of education for women in technology and her practice of mentoring many women in the field will clear the way for her daughters. “Today, we’re actually losing a lot of women from technology and science,” she said.

For more information...

Women @ College of Computing
www.cc.gatech.edu/people/women

Women’s Resource Center
women’scenter.gatech.edu

From dorms to Daytona: Tech joins the pro racing circuit

David Terraso
Institute Communications and Public Affairs

Silverstone Racing unveiled a new car and a new partnership with Georgia Tech at the Grand Prix of Miami at Homestead-Miami Speedway last month. The car, a number 29 Crawford-manufactured Daytona Prototype, will be painted Georgia Tech colors — gold, white and blue — and will sport the logo of the Georgia Institute of Technology, alma mater of car owner Lawrence F. Huang.

“Joining Silverstone Racing will be three new members from GT Motorsports, Tech’s student racing team, and a marketing team made up of students from the College of Management, the business school at Georgia Tech. "I’m amazed at the level of sophistication the GT Motorsports cars achieve, especially in the area of software systems. The students from GT Motorsports bring a tremendous amount of technological expertise to the team," said Huang.

The Georgia Tech car will compete in each of the races of the 2004 Grand American Rolex Sports Car Series, appearing at speedways such as Watkins Glen, Daytona International...
The first annual Black Leadership Conference, held last month in the Georgia Tech Student Center, brought together students, faculty and staff in a focused effort to identify and develop skill sets for lifelong success. Sponsored by the African American Student Union, the two-day event featured workshops on topics ranging from graduate school to community service to advancing in the corporate world.

Above left, keynote speaker Michael Russell, CEO of H.J. Russell & Company — one of the country’s largest minority-owned enterprises — gave a personal history of how his father started a business 50 years ago that is now helping to shape city skylines.

Later in the day, Kasi David, a graduate student in materials science and engineering, and Esinam Glakpe, an undergraduate in chemical engineering, led a panel discussion consisting of former and current campus leaders, discussing the importance of getting involved on campus and offering strategies for succeeding in non-black student organizations.

Miya Smith, right, an industrial engineering undergraduate, also participated in the campus involvement panel discussion.

Scott Flanagan and Kevin Boyd will join Silverstone as trackside engineers and members of the pit crew. They’ll be responsible for further developing software to control various functions. Each year, the members of GT Motorsports design, build and race their own open-wheel formula racecar in competitions around the world.

“We’re all really excited. Most of us want to work in professional racing, so this is a great opportunity for us,” said Stephens.

“Our partnership with Tech gives the students an opportunity to use the skills they’ve learned at Tech and as part of GT Motorsports in a real-world environment,” Huang said.

“We hope this lasts well beyond this year’s racing series,” Huang said.

Huang graduated from Tech in 1973 with a degree in industrial management and has been on the Tech campus ever since. In addition to providing engineering students with valuable experience, Silverstone Racing is sponsoring a competition at the business school for students to develop a marketing plan for the Georgia Tech car. The winning team will then implement its plan throughout the 2004 Grand American Rolex Sports Car Series.

“Our students’ technologically focused business education gives them the perfect preparation to successfully market the Georgia Tech car to potential sponsors. Working with Silverstone Racing will be a great forum for our students to market their skills,” said Terry Blum, dean of the business school.

The car will be on campus as part of the Georgia Tech Autoshow, to be held Mar. 27. All races in the 2004 Grand American Rolex Sports Car Series are scheduled to be broadcast on the Speed Channel.

For more information...

GT Motorsports
www.me.gatech.edu/gtmotorsports

Georgia Tech Autoshow
www.me.gatech.edu/autoshow

Grand American Road Racing
www.grandamerican.com
C A M P U S  E V E N T S

Arts & Culture
Mar. 11
The American Museum of Papermaking hosts an opening reception for its latest installation, a juried exhibition entitled “Innovative Printmaking on Handmade Paper.” At 5 p.m. at the Institute of Paper Science and Technology. For more information, visit www.ipst.gatech.edu/amp.

Mar. 13
The Ferst Center for the Arts welcomes Rockapella for an 8 p.m. performance. Faculty and staff receive a 10 percent discount on advance tickets. For more information, visit www.ferstcenter.org.

Mar. 16
The bookstore welcomes William Taubman, who will be signing copies of his new book, “Khrushchev: The Man and His Era,” at 7 p.m. For more information, visit www.bookstore.gatech.edu.

Brown Bags/Conferences/Lectures
Mar. 15
The Architecture Program’s Spring Lecture Series welcomes James Gypsh, CEO of Gypsh Technologies, at 5:30 p.m. in the College of Architecture Auditorium. For more information, e-mail wanda.dye@arch.gatech.edu.

C L A S S I F I E D S

Appliances
Refrigerator, $140; range, $140; dish-washer, $90; over-range microwave, $90. All white, GE, excellent condition. Call Jon, 385-2935 or e-mail igetauff@hotmail.com.

Whirlpool washer and dryer. Still under warranty; both bought in September 2003. $500 for both. Call 385-6042 or e-mail dhoff86@att.net.

Automobiles
1982 Volkswagen Rabbit. Convertible, 94K miles, good shape, owner since 10K miles, manual, $900. Call Jon, 770-563-5242 or e-mail dhoff86@att.net.

1984 Toyota Corolla. Diesel, 49 mpg, 161K miles, several new parts, 5-speed, manual, $950. Call Jon, 770-563-5242 or e-mail dhoff86@att.net.

1992 Honda Prelude. 5-speed, 119K miles, silver, clean condition, 120K miles major service done, needs 2 tires, $3,987. Call Glen at 894-3418.


1996 Nissan Maxima SE. Excellent condition, 4-speed auto transmission. a/c, extra clean, CD player, power moon roof, white 4-door, keyless entry, alarm, cruise, $4,500 OBO. E-mail amandau@bellsouth.net or call 678-291-0928.

1997 Subaru Legacy L sedan. White, 74K miles, gray interior, AWD, automatic, cassette, new tires. Runs great, fun to drive. $5,000. E-mail roger.narayan@mse.gatech.edu.

1998 BMW 528i. All options including automatic, leather, premium sound with 6-CD changer, moonroof, just serviced. 88K miles, $16,000. Call 894-5098.

2001 Ford F150 SD, 5.4 liter V8, 4-door, hunter green, lastat, loaded, VIN, factory plastic terrific condition. 235 miles, warranty expires 7/04, $20,000 firm. E-mail d.senn@gtri.gatech.edu or call 770-528-7011.

Computers
Dell Axim X5 (300MHz) PDA with Bluetooth card, DataViz Desktop To Go software, and USB sync cable, $75. E-mail eric.logan@ece.gatech.edu.

Palm m510 with cradle/charger, Palm Bluetooth card, DataViz Desktop To Go software, and USB sync cable, $75. E-mail eric.logan@ece.gatech.edu.

Furniture
Wrought iron coffee table and two end tables. Charcoal gray/black with some silver accent. $75. Antique footstool, burgundy needle point, 1920s, $50 firm. Call 894-1711 or e-mail nicole.pampalin@facilities.gatech.edu.

Real Estate/Roommates
2-story Victorian home for rent in Candler Park. Fully furnished (see www.ct02.gatech.edu/home). Walk to restaurants, park/tennis/pool, MARTA. Available in May, $1,500/mo. + utilities. Call 404-223-6227 or e-mail jb130@mail.gatech.edu.

Mountain home 60 miles north of Tech. 3-BR/2.5BA, private 1 acre of forest. Oak floors, vaulted ceilings, stone and wood accents, decks. Tour at www.estesvr.com/residential/ bentree/5777-bellevista.htm. Listed at $395K, eager to sell. E-mail roesnerr@mindspring.com.

3BR/1BA for lease. Dining room, living room and basement. Large carport. Totally remodeled. Located in the city of Atlanta, near Collier Heights. Call 404-271-9994 or e-mail hadan233@yahoo.com.

3BR/2BA home for sale. Clairmont/ Briarcliff area. Brick ranch house with finished basement, work bench area, screened porch, expansive decks around inground pool. Call 894-9945 or e-mail haben.fore@fotel.gatech.edu.

Sports/Fitness/Recreation
Health Rider, with timer and spot to add on weights, $75. Ab Doer, in the box, never opened. $50. E-mail nicole.pampalin@facilities.gatech.edu or call 894-1711.

Miscellaneous
Kitchen in shining armor! Six-feet tall, free standing, made of gold brushed tin. Eclectic must-have for creative decor or unique collectors. $350 OBO. E-mail j1009@mail.gatech.edu or call 404-271-4266.

Faculty/Staff Development
Mar. 17
The School of Industrial and Systems Engineering’s Natural Systems Speaker Series welcomes Amy Lovins, CEO and co-founder of the Rocky Mountain Institute, at 4 p.m. in the Tennenbaum Auditorium. For more information, visit www.sustainable.gatech.edu or call 894-7895.

Mar. 17
The School of Psychology’s Colloquium Series continues with Laura Castrensen, professor of psychology at Stanford University, on “Aging, Motivation and Emotion,” at 3:50 p.m. in room 250, Coon Building. For more information, e-mail christopher.herzog@psych.gatech.edu.

Mar. 17
The College of Management’s IMPACT Speaker Series welcomes John Huntz, managing director of Faqua Ventures, at 4:30 p.m. in the LeCraw Auditorium.

Mar. 18
The School of Chemistry and Biochemistry welcomes Alan Heeger, a professor of physics at the University of California at Santa Barbara and Nobel laureate, delivering the Dean’s Special Lecture in Chemistry on “Gene Sensors: Detection of Specific Target Sequences on DNA,” at 4 p.m. in Room B6, Boggs Building.

Mar. 18
The College of Management’s IMPACT Speaker Series continues with Larry Norton, chief of staff at the IBM US Government Business Unit, at 4 p.m. in the LeCraw Auditorium.

Mar. 18
The Center for the Enhancement of Teaching and Learning hosts its annual “Celebrating Teaching Day,” featuring the Spring 2003 Heeban Award Teaching Fellows. The Fall 2003 Class of 1969 Teaching Fellows and the 2003 STEP Fellows, from 10 a.m. - 2 p.m. on the Skiles Walkway.

Mar. 17
The Atlanta Symphony Orchestra presents the first of three concerts from the series of Maestro Meisel’s “Great Musicians of the 20th Century.” For more information, call 894-9964 or e-mail nadia.zitman@osp.gatech.edu.

Mar. 17
The Office of Sponsored Programs hosts a workshop on “The Federal Circulars and the FAR,” from 1 - 4 p.m. in the Research Administration Building. For more information, call 894-6944 or e-mail nadia.zitman@osp.gatech.edu.

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