Welcome from the Chair

The year 2010 marks the 30th anniversary of the founding of the Department of Computer Science and Engineering. We came from the Electrical Engineering department during a time when interest in the area was high. The administration made a wise decision to restructure a bit and the Department was created. We have a number of things to be proud of after 30 years. Notably, in the recent ranking of Doctoral programs by the National Research Council we came out the best department in Florida! Our students, staff, and faculty have made this happen and share in the accomplishment. Our graduates are going on to excellent jobs and careers; in Academia, at places like Penn State, Clemson, Notre Dame, etc. In industry, graduates have taken jobs at Intel, AMD, Fair Isaac, Honeywell, Raytheon, CAE, Harris, and JPL among other top firms.

We have seen a recent spike in Ph.D. graduates as well as aspirants for our Undergraduate programs. This fall we have 18 new Ph.D. students to participate in the interdisciplinary research done in conjunction with Physics, Moffitt Cancer Center, Electrical Engineering, Marine Science, and more.

We have been fortunate to recently receive an endowment to support a graduate fellowship from an alumnus, Dr. Maha Sallam and her husband K.K. Quah. It is called the Spirit of Innovation Award. Thanks Maha and K.K.!

Now, in honor of our anniversary, I would like to present a challenge to all our alumni. We are very light in undergraduate scholarships, generally being able to provide about 1 or less per year. How about establishing a 30th anniversary undergraduate scholarship? If we can get just 100 alumni to contribute $250.00 each, we can endow it in perpetuity. I think we can and will do this, so I will start it off with $1000.00. To donate, just go to:

https://usfweb2.usf.edu/foundation/asp/ssl/afdn/funds.asp?dept=ESB&group=TG

Select 220290 Computer Science and Engineering Fund, then tell us the gift is made in honor of the 30th year fund. Thanks for your support!

Finally, we hope to be able to let you know of a 30th year activity for Alumni soon. Go Bulls!

Best Wishes,
Lawrence O. Hall
Professor and Chair
New Fellowship for Graduate Students

Dr. Maha Sallam and her husband K.K. Quah have kindly donated to USF to establish an endowed graduate fellowship in CSE! It is called the Spirit of Innovation Award.

Maha graduated with her Ph.D. from USF CSE and went on to found a company to develop a digital mammography system that could serve as a second reader. The company succeeded in developing an excellent product and then merged with another company. They are producing other devices enhanced by computer vision and pattern recognition which are Maha’s areas of expertise. We applaud her entrepreneurial abilities.

The fellowship will be appreciated by graduate students through time, beginning next fall! Thanks Maha and K.K.!

Tango Panopticon

As an artist and a computer scientist respectively, USF professors Robert Lawrence and Anda Iamnitchi combined their interest in large-scale social interactions to produce a worldwide synchronous public art event. With funding by USF Colleges of Engineering and The Arts, their collaboration drew hundreds of Tango enthusiasts in dozens of cities around the world in Tango Panopticon 2.0.

The technical aspects of the project were Iamnitchi’s domain. Her work focuses on large-scale distributed systems, with current emphasis on socially aware applications, and ways to create systems that can manage huge amounts of data. The challenge of Tango Panopticon was to create a system that expands to handle the potential load of a simultaneous, global event whose magnitude could not be fully known until the minute it happened.

An additional facet of the project was integrating social media into the event. Participants and viewers alike were able to tap into Twitter and post videos and comments on the Tango Panopticon website, making the event fully interactive on a global scale. The challenge for Iamnitchi and her student Michael Stillo, who was working on this project as part of his Master thesis, was how to design the system to work seamlessly, making the technical aspects of the event nearly invisible. The open source platform they built for Tango Panopticon provides for a democratization of media that will enable other worldwide synchronous events by anyone with access to everyday mobile devices and the Internet.

*Tango Intervention -- An unexpected event held in a public space that is monitored by government or private surveillance cameras.
Spotlight on New Grants

Select new grants awarded since our last communiqué

Dr. Yu Sun received the NSF Cyber-Physical Systems grant. Awarded for the proposal titled: CPS: Small Virtually Transparent Epidermal Imagery. Adam Anderson from USF EE is Co-PI for the 3 year, $499,000 grant. Their research will develop a system giving surgeons x-ray vision via micro cameras displaying the in vivo surgical area directly onto a patient’s skin. The results will be a potential paradigm shift in minimally invasive surgery.

Prof. Ranganathan received a $42,000 grant for VLSI Clock Control Mechanism from the Florida High Tech Corridor in conjunction with the East-West Innovation Corporation. InnovaClockControl™ offers patent-pending solutions to reduce IC power consumption and to improve power-grid integrity. Further details on the research can be found at the InnovaClockControl webpage.

Dr. Yicheng Tu’s collaboration with Dr. Sagar Pandit, USF Department of Physics, and Dr. Xingquan (Hill) Zhu from Florida Atlantic University Computer Science and Engineering, has been awarded a 5-year $875,000 NIH grant for their research on “Database Analysis for Molecular Simulations”. The project addresses key data management challenges in performing molecular simulations.

Professors Dmitry Goldgof and Larry Hall have received the first year of funding of a 5 year grant with Bob Gillies, PI, and Bob Gatenby, M.D. at the Moffitt Cancer Center. The subaward is part of a $2.98M grant to study the “Radiomics of Non-Small Cell Lung Cancer”. This research brings together CT and PET imaging with microarray analysis to study lung cancer tumors and categorize them by type and aggressiveness towards maximally effective treatments.

CSE Shines

2010 National Research Council Rankings

Every ten, or so, years the National Research Council (NRC) ranks eligible Ph.D. granting programs based on quantitative and qualitative data. The rankings put programs into a range from the 5th to 95th percentile. USF departments of Psychology and Computer Science and Engineering were ranked within the upper third of all programs in their discipline with respect to research activity in this year’s rankings.

The evaluation of 128 CSE Ph.D. programs have our Department ranked the best in Florida in terms of research productivity and top third in the nation, as well as an “R-ranking” between 36 and 66 and an “S-ranking” between 18 and 62. The first is derived indirectly from programs’ reputations, and the second is derived more directly from programs’ characteristics. You can look at some ratings from the rankings at:

http://graduate-school.phds.org/

Obviously, it is non-trivial to obtain rankings of 128 programs and all rankings are equivocal. However, in 1995 we were at 69 and our 95 percentile ranking in both categories above is higher. Our goal is to narrow the range and move towards the front. We do believe this shows the ever-improving quality of the Department and the value in a degree from USF CSE. It is a testament to all the hard work of our students, staff, and faculty, as well as the support from the administration.
A Strong USF Showing at the 20th International Conference on Pattern Recognition

3 USF Professors, 4 doctoral students, and 1 recent Ph.D graduate traveled to Istanbul, Turkey to participate in this premier conference for pattern recognition researchers. One of the highlights of the conference was the announcement of the prestigious IAPR Fellow awards, biennially conferred on persons to acknowledge their distinguished contributions to the field of pattern recognition. We are delighted that two of our faculty, Dmitry Goldgof and Lawrence Hall, were among the honorees this year.

Drs. Goldgof, Kasturi and Sarkar also served as session chairs and as members of the conference organizing committee. The papers presented at the conference by USF participants:

**Detecting Wires in Cluttered Urban Scenes Using a Gaussian Model**
by Joshua Candamo, Dmitry Goldgof, Rangachar Kasturi, and Sridhar Godavarthy

**Weighted Boundary Points for Shape Analysis**
by Jing Zhang and Rangachar Kasturi

**Detecting Group Turn Patterns in Conversations Using Audio-Video Change Scale-Space**
by Ravikiran Krishnan and Sudeep Sarkar

**Modeling Facial Skin Motion Properties in Video and Its Application to Matching Faces Across Expressions**
by Vasant Manohar, Matthew Shreve, Dmitry Goldgof, and Sudeep Sarkar

**Tracking Ships from Fast Moving Camera through Image Registration**
by Sergiy Fefilatyev, Dmitry Goldgof, and Chad Lembke

**Text Detection Using Edge Gradient and Graph Spectrum**
by Jing Zhang and Rangachar Kasturi

Congratulations to Professor Horst Bunke of Switzerland, a frequent visiting professor to our department, who received the K-S. Fu Prize which is the highest award for a researcher in pattern recognition. He delivered the K-S. Fu Prize talk, “Towards the Unification of Structural and Statistical Pattern Recognition”. 