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Rice University Profile: Jaspal Subhlok Explores the Unknown

“All I knew about computer scientists was that they built calculators. Jumping into something I knew nothing about was exciting,” said Jaspal Subhlok, the Ph.D. alumnus from Rice University who is now in his third term as chair of the Department of Computer Science at the University of Houston. “This was back in 1980. I was in the aeronautical engineering program at the Indian Institute of Technology, Kharagpur and I had recently realized that India was not designing aircrafts.”



Subhlok said he reviewed his interests and skills and concluded that he enjoyed logic and mathematics the most. He was told that is what computer science was about, so he switched to the CS program. After completing his undergraduate degree, he applied to graduate schools in the United States and was accepted to several of his top choices. To make his final decision, he wrote to the professors he wanted to work with.

“I contacted Ken Kennedy at Rice and I really didn’t know what I was talking about. I just said I was interested in algorithms, programming languages, this and that. Then I got this wonderful reply from Ken. His letter wasn’t just ‘you should come here,’ he went into detail and said, ‘If parallel computing is what you want to study, then I’ll be happy to work with you, If it’s programming languages, I’ll direct you to Professor Cartwright,’ and so on. That is what drew me to Rice. If I got letters back from the other schools, they seemed obviously typed by a secretary. The half hour or so Ken Kennedy spent personalizing my letter made the difference – it worked.”

Three decades later, Subhlok reflects on the way computer scientists approach their problems. He said everything looks different on the surface but

the roots of CS remain unchanged.

“Back then we were working on a computer that took up a giant hall and everything was much slower. Even before Rice, I had been programming on data punch cards – a stack of cards was your program. If you dropped the stack you had to re-order the cards. A week after submitting your program you would finally find out if it worked or not. Things have come a long way, but the basics of programming are not that different. Computational principles are not that different. At its root, computer science has always been about using electronic and mathematical advancements to solve problems. That’s not going to change. We have a problem, we figure out how to solve it, how to spell it out to the computer so it can solve it for you.”

Although he’s had several high points over his academic and research career, he finds the greatest pride in what his department has accomplished since he began serving as its chair. He said the role is an interesting and challenging combination of working with diverse groups like the university’s administration and friends in industry, all the while making sure that the needs of students and faculty members are served.

“In the last few weeks, my conversations have included talking to faculty members we’re trying to hire, alumni who are committed to helping us advance, getting final bids on renovation projects, and enhancing the curriculum. As a chair, you have to think of the big picture all the time. Where does the department need to be in five years or ten? But the combination of being in the trenches and addressing the future directions and issues is challenging and rewarding.”

Subhlok says his frustrations are usually due to the ten things he wants to accomplish in a week that get side-tracked in the day-to-day activities, and he attributes his success to the quality of the people he works with. He said, “It is simply because we’ve had really good people. We’re one community as a department, with little internal negative politics. As a chair, there are so many things you could do that choosing a direction requires a compass. For me, that compass is something that will lead to long term student

Continued on page 2...

success. It's the only reason for a university to exist, and we forget that sometimes because of other things we are focused on."

Over the last six years, his department has changed the way they approach the teaching responsibility of their faculty members. "The typical model has often been for each professor to teach X courses a year," said Subhlok, "but we decided to look at it differently: these are our students and this is what needs to be taught. How do we share that responsibility fairly? How do we provide the best possible education to students but not overload the faculty?" The process involved evaluating every course being taught for its value to the program and introducing new courses. "If we offered courses in the past only because it helped someone meet their teaching workload requirement, we dropped the course. If it is not important to student success, it is no longer being taught."

At the same time the curriculum has been aligned to what students needed to succeed, which means the undergraduate and graduate programs look different. "The undergraduate students needed more exposure to emerging computer science topics, so the new program allows for more CS electives. The graduate students need more depth in their specializations –like distributed computing or data analytics– so specialization tracks were added," said Subhlok, whose focus had also including building up the UH CS community.

"Our alumni and industry supporters have been terrific. They say, 'tell us what you need and we'll get it done.' But we've also gotten lucky because the faculty we've recruited have all been excellent. We recruit them for life and then try to make sure they get what they need from us."

He is also determined to balance research and teaching. "That's a very important issue in CS. Research and education can co-exist together beautifully in an ideal world, but it doesn't always happen. A lot of time we are so lost in our research, we forget we are here for the students. For this to work really well, student success and faculty success have to be aligned.

"You can't say the only thing you will reward is the number of papers published, then expect faculty to be wonderful teachers. Internally, we've changed the way we look at merit raises. If a faculty member really enjoys teaching, they can focus on teaching and really succeed. Other faculty are really interested in research and can spend more time focusing on that."

Subhlok has been pleasantly surprised at the response to a cultural shift that really values student success. "The faculty members always meet the need. We realize we need a course that we aren't currently teaching and it's going to require months to set it up? Done. Someone will step up. Here, research and teaching co-exist very well."

- Carlyn Chatfield, Computer Science Publicist/Web Editor, Rice University

Department Participates in UH Take Your Child to Work Day

In June, the College of Natural Sciences & Mathematics (NSM) and four other colleges (M.D. Anderson Library, C.T. Bauer College of Business, Kathrine G. McGovern College of the Arts, Conrad N. Hilton College of Hotel and Restaurant Management) participated in the inaugural "UH Staff Council Take Your Child to Work Day." During the event, children of UH employees and their parents visited one of the colleges of their choice and participated in a variety of activities.



Children who visited NSM had the opportunity to visit three departments within the college – Computer Science, Chemistry and Physics. These departments had their own activities and demos that

related to their field of study. Each child received a swag bag full of UH gear from all of the participating colleges. Children also received a t-shirt and drawstring bag donated by the CougarCS student organization.

Kicking off the event was the Department of Computer Science's Interactive Game Development team led by Dr. Chang Yun, UH Students and Alumni (Daniel Biediger, Mohammed Alshair, Brian Holtkamp, Thomas Laroche, Geron Adams, Minjie Kim and Nancy Lam).

Children learned more about the CS Gaming Program and its success stories through demos with Virtual Reality (VR)/Augmented Reality (AR) based Serious Games (Oculus VR & Microsoft HoloLens) and PC Games with Xbox. After the demos, the children visited the Department of Chemistry where they were able to experience chemical reaction demos led by students in the American Chemical Society. The final stop was the Department of Physics where the children viewed demos on the Meissner effect (superconductivity) and gyroscope rotating stools/wheels activities.

This event could not have been such a success without the donations, volunteers and coordination from UH Staff Council (Peggy Levy and Lynn Smith), College of Natural Sciences & Mathematics (Zach Moore, Hillary Norwood and Jonas Chin) and the Department of Computer Science (Gillian Bautista).

Borders, Trade, and Immigration Institute Ribbon Cutting Showcase

BTI Institute

Borders • Trade • Immigration

A Department of Homeland Security Center of Excellence

The Borders, Trade, and Immigration Institute, a Department of Homeland Security Center of Excellence, hosted an open house in March to promote its mission

to strengthen border security, facilitate legitimate trade and travel, and ensure the integrity of our nation's immigration policies.

The event consisted of a ribbon cutting ceremony and a showcase of research projects from all partner institutions focusing on technology and policy research related to border issues, trade, and immigration. Additional projects concentrating on education and workforce development were also presented.

The ribbon cutting ceremony started with an original contemporary dance performance from Karen Stokes Dance group, whose thematic material and accompanying video projection referenced the Houston Ship Channel and the flows of goods and people across borders.

The BTI Institute welcomed several distinguished speakers and guests, including: Robert Griffin, Under Secretary (Acting) for DHS Science and Technology Directorate (by video); Matthew Clark, Director of the Office of University Programs, DHS Science and Technology Directorate (comments via letter); Cynthia F. Whittenburg, Deputy Executive Assistant Commissioner, Office of Trade, U.S. Customs and Border Protection; Andrew K. Scharnweber, Associate Chief, U.S. Border Patrol, U.S. Customs and Border Protection; Louis Guthrie, Chief, Alabama-Coushatta Tribal Police Department; Joe Frank Martinez, Sheriff, Val Verde County, and Chairman, Southwest Border States Sheriffs Coalition; Bradley L. Etter, Chief Intelligence

Office, Immigration and Customs Enforcement OR Homeland Security Investigations

Ivan Sanchez presented a certificate of congressional recognition for the mission of the BTI Institute to Director Ioannis A. Kakadiaris on behalf of United States Congresswoman Sheila Jackson Lee.



Following introductions, BTI director Kakadiaris presented the vision of the BTI Institute. All speakers recognized the importance and impact of the BTI mission and reiterated the need for and commitment to long-term collaboration with BTI Institute.

The project showcase was comprised of 12 researchers from Middlebury Institute of International Studies, Rutgers University, Texas A&M Transportation Institute, University of Houston, University of Minnesota, University of North Carolina at Charlotte, the University of Texas at El Paso, West Virginia University, and Voir Dire International LLC.

Special guests included Oscar Rodriguez-Cabrera, Consul General Mexico, Carlos H. Pacheco-Murillo, Consul General Costa Rica, Oscar Solis Floris, Consul, Mexico, and Welcome Wilson, Sr.

Fundamentals of Real-Time Virtualization from the Resource Management Perspective

Recent Ph.D. graduate Yu Li (December '16) and Albert Cheng developed a ground-breaking approach for implementing the virtualization layer that can maintain the schedulability guarantees without code modification of the application(s) while maximizing the utilization of the underlying hardware resources. This is the first-ever approach for transparent real-time task scheduling on temporal resource partitions. This represents a fundamental advance in real-time virtualization, enabling scheduling and timing guarantees for practical applications running in open and cloud computing environments.

A Virtual Machine Monitor (VMM) partitions a host physical machine into a group of Virtual Machines (VMs). Typically, a VM only preempts a part of a dedicated physical resource temporally or spatially. This fact greatly impacts the real-time task scheduling in VMs because most traditional real-time scheduling theories are based on dedicated resources.

The real-time community has introduced several Hierarchical Real-Time Scheduling Models to address this issue. Among them, the Regularity-based Resource (RRP) Model is able to provide maximal transparency for task scheduling. However, current theoretical results on the RRP Model are still far from the complete theoretical

fundamentals required by a real-time VMM.

At the resource level, only a naive algorithm has been found for resource partitioning. At the task level, only the Periodic Task Model is investigated, and even for this task model, only one simple case has been considered. Li and Cheng's work explores the RRP Model at both the resource and task levels. On the one hand, it is the first to solve the resource partitioning problem with both global and partitioned strategies.

On the other hand, it solves the task scheduling problem with a strong result that the classic task scheduling problem in the RRP Model can be easily transformed into an equivalent problem on a dedicated resource.

With these theory enhancements, they developed a 2-layer real-time resource model, and thereby fully established the theoretical fundamentals of a real-time VMM from resource management perspective.

Key Publication: Yu Li and Albert M. K. Cheng, "Transparent Real-Time Task Scheduling on Temporal Resource Partitions," IEEE Transactions on Computers (TC), Vol. 5, pages 1646-1655, May 2016. (IEEE TC is the flagship journal of the IEEE Computer Society.)

Under Cyber Attack: Researchers Look at How to Catch a ‘Phisher’

As cybersecurity experts scramble to stop another wave of ransomware and malware scams that have infected computers around the world, computer science experts at the University of Houston are “phishing” for reasons why these types of attacks are so successful. The research findings, presented in April 2017 at the ACM Asia Conference on Computer and Communications Security, are being used to develop the next generation of email filters to better identify and defend against this type of cyber attack.

Computer science professors Rakesh Verma, Arjun Mukherjee, Omprakash Gnawali and doctoral student Shahryar Baki used publicly available emails from Hillary Clinton and Sarah Palin as they looked at the characteristics of phishing emails and traits of the email users to determine what factors contribute to successful attacks. The team used natural language generation—a process used to replicate human language patterns—to create fake phishing emails from real emails. It’s a tactic used by hackers to execute “masquerade attacks,” where they pretend to be authorized users of a system by replicating the writing styles of the compromised account.

Using the Clinton and Palin emails, the research team created fake emails and planted certain signals, such as fake names, repetitive sentences and “incoherent flow.” After exposure to sample real emails, study participants were given eight Clinton emails and eight Palin emails—four were real, four were fake. Volunteers were asked to identify which emails were real and explain their reasoning. The study took into account the reading levels of the Clinton and Palin emails as well as the personality traits, confidence levels and demographics of the 34 volunteers who participated.

The results of the study showed that:

- Participants could not detect the real emails with any degree of confidence. They had a 52 percent overall accuracy rate.
- Using more complex grammar resulted in fooling 74 percent of participants.
- 17 percent of participants could not identify any of the signals that were inserted in the impersonated emails.
- Younger participants did better in detecting real emails.

- Only 50 percent of the participants mentioned the fake names.
- Only six participants could show the full header of an email.
- Education, experience with emails usage and gender did not make a difference in the ability to detect the deceptive emails.

“Our study offers ideas on how to improve IT training,” Verma said. “You can also generate these emails and then subject the phishing detectors to those kind of emails as a way to improve the detectors’ ability to identify new attacks.”

In the case of the recent Google Docs attack, Verma says people fell for the scam because they trust Google. When users opened the given URL, they were sent to a permissions page and hackers got control of their emails, contacts and potentially their personal information. Google stopped the scam, removed the fake pages and disabled offending accounts. Verma said a real Google Docs application will generally not ask for permission to access your contacts or read your emails.

The “WannaCry” ransomware attack that has hit banks, hospitals and government agencies around the globe is also spread through email phishing and can be spread through the Google Doc-type “worm” as well.

What all email users need to know in order to protect themselves:

- Look closely at the sender of the email and the full header that has information about how the email was routed.
- Look at the body of the email for any fake, broken links that can be identified by hovering a mouse over them.
- Think about the context of the email and how long it has been since you have had contact with the sender.

“There will be copycat attacks in the future and we have to watch out for that,” said Verma.

- Sara Tubbs, UH Media Relations

The Future of Human-Computer Interaction

Think “Westworld.”

Futuristic artificial intelligence has advanced to a state in which machines are indistinguishable from humans. Is it possible? Maybe, thanks to research from a UH professor.

Zhigang Deng, the director of graduate studies in the Department of Computer Science, is breaking ground in the new field of behavioral science by quantifying eye contact in multi-person conversations.

“I’m trying to understand human behavior from a computational standpoint and, based on the results, understand how humans and computers can work together,” Deng said.

Rather than taking the qualitative approach that typical behavioral scientists use when analyzing how humans interact, Deng uses computers to map out every eye movement his human models

make and captures them on highly sensitive cameras.

His computers then crunch the data to give him a high-quality quantitative representation of how humans use eye contact to facilitate communication when there is more than one person involved in a conversation. Then, he applies the findings to computer-generated human avatars.

This research, Deng said, could create drastic changes to the way video games look and feel, enabling developers to create ultra life-like, on-screen human simulations.

“(The findings from this research) could make avatars more natural and believable,” said Yu Ding, Deng’s postdoctoral researcher. “In the industry, animations are produced manually by artists. It is very time-consuming and expressive, and the produced animation can be only applied to delicately planned scenarios.”

“It can automatically generate the animation of multi-party conversations only according to the speech information, including the hand gesture, lip-sync, facial expression and eye-gaze direction,” said Yuting Zhang, a second-year doctoral candidate under Deng. “That is almost everything during conversation. So in the fields of film and game, we don’t need to capture the real humans’ behaviors anymore — which cost much time and labor.”

The applications of this research span further than the film and gaming industries; it could revolutionize virtual education, training and medicine, Deng said.

The presence of a human-like gaze could help many learn more effectively, especially when it comes to topics that typically require another person or an actor to teach, like a medical student learning

proper bedside manner, Deng said. It could even help in the diagnosis of autism, a notoriously hard-to-diagnose disorder.

Deng can even foresee a future in which computers work in tandem with detectives to uncover the truth by analyzing a suspect’s eye movement and body language by acting as a more accurate polygraph test. It may not sound like “Westworld” just yet, but Deng hopes that in the future, robots will communicate in humanity’s native language: eye contact.

“In the future, we can make social or humanoid robots that have a normal human gaze, the gaze I’m familiar with,” Deng said.

- Isabel Pen, Daily Cougar Reporter

Experience PROS



When you start to shop for a laptop, new phone, a car or even clothes, chances are your first (or even second) stop isn’t a retail store. In fact, you may not interact face-to-face with anyone at all throughout your entire purchase.

Technology has changed the buying experience forever, and that’s a great thing... if you’re buying something. For sellers, it’s not so simple. Companies used to the traditional way of doing things are realizing they need to think of their business in entirely new ways or risk getting left behind by new, agile businesses that meet customers when and where they need them (think Uber, Netflix). And – a business is only as good as the experience it can deliver – if they aren’t easy to work with, fast, or prices aren’t consistent whether buying online, in their store or from a reseller who carries their



products – they may not be in business long.

That’s where PROS comes in. We provide technology that helps companies in a variety of industries (airline, automotive, cargo, food & beverage, healthcare, high-tech, oil & gas, etc.) make the leap to “modern commerce,” enabling them to leverage their big data for machine learning and sophisticated analysis that drives better pricing, increased sales and improved customer satisfaction. For example, Hewlett Packard Enterprise worked with PROS to reduce the time it took to provide customer quotes from days to a few hours through an automated “no-touch” bid process built around smarter pricing strategies. By eliminating “hunches” and unnecessary discounts, the company also improved its margins and volume while

increasing partner satisfaction.

So what does all this mean to a smart UH computer science student? PROS is always looking for the best and brightest graduates to keep driving our innovation and technology forward, and UH has been a great source of PROS talent for years. In fact, PROS co-founders Ron and Mariette Woestemeyer are proud UH graduates!

As a tech industry leader, PROS takes its responsibility of developing and supporting tomorrow’s tech leaders seriously. Whether it’s sponsoring events like the CodeRed Hackathon, participating on UH advisory boards such as PROS Yan Xiu, or providing opportunities for real-world experience and recruiting through a robust internship program, PROS is committed to helping UH students prepare for a successful career in technology.

Think you want to be a part of it?

Many PROS employees today started as interns. The PROS intern program is interactive and helps students apply what they’ve learned in their university coursework to real-world business challenges while developing connections with PROS employees and executives. The program is structured to allow interns time to learn, grow, network and work on meaningful projects that drive PROS forward.

But don’t take our word for it, see what your fellow students and peers have to say about working with PROS:

“Interning at PROS last summer was an amazing experience. I had the opportunity to work in different projects and with different technologies. I had great support from the people I worked with and met. The company’s culture and environment were definitely something that also astonished me, especially the team. You can tell the company really cares about its employees and that the employees are happy to work here. Everybody is always nice and willing to work together to make sure we can all succeed together to keep growing the company. I am proud to be part of the PROS family.” – Eduardo Lopes, Software Engineer I, UH graduate and former PROS intern

“I like how everyone here at PROS is genuinely nice, willing to help, and last but not least, they are welcoming.” - Andy Hinh, UH student, second-year PROS intern

Interested in becoming an intern or in starting your career at PROS? Come see us at the fall career fair or contact us at talentacquisition@pros.com. We’d love to tell you more about what makes PROS such a great place to work!

CS Alumni Mixers: People Networking

Back in May 2016, the Department of Computer Science held an alumni mixer at Calhoun's Rooftop. The department asked me if I'd write a few words about that to share in the department newsletter. I said of course I would because there are many great reasons to attend the alumni mixers, and if I can help get more people out I'm more than willing to do my part.

Fast-forward a year.

I'm assuming none of you ever saw that article in the newsletter because I never got around to writing it. Family responsibilities, professional responsibilities, and a fair share of laziness and procrastination all contributed to the tardiness of this piece.

But it's here finally, and my feelings haven't changed – though some more events have come and gone in the interim. Since the time I initially committed to penning these words, we've had two additional alumni mixers – one at St. Arnold's Brewing Company in January and another this May, again at Calhoun's Rooftop.

All three of these events were fairly successful, especially the St. Arnold's event. I enjoy seeing all my old classmates and talking about what everyone is up to these days. We'll talk about which classes we were in with who and inevitably lament the MRPs from Software Engineering with Hilford. If you don't know what those are, count yourself lucky.

So what exactly is a mixer and why should you attend the next one? Let's tackle those one at a time.



A mixer is a gathering, usually involving food and drink, where professionals (I use the term loosely) can mingle and converse about pretty much anything. What's great about the computer science alumni mixer is that you already have a lot in common with all the other attendees. So it's pretty easy to strike up a conversation. I remember when I was a first year student at UH there were these four guys (well – there were more, but four main guys) that were REALLY in to Magic: The Gathering. I'd sit up in the fifth floor lab in PGH and try to study while these yahoos would basically try to decipher the cryptic rules of the game with a measure of pedantry not seen since Bill Clinton questioned what the meaning of the word "is" is.

Well, I ran into one of these guys at the mixer and had, for the

first time, a genuine conversation with him. I learned about what he's doing (working for a moderately successful startup, it turns out), and I told him how crazy they used to drive me while I was trying to study. It was a good ice-breaker, but I found out that he's a pretty good dude in the process.



This brings me to point two: these mixers are a great opportunity to expand your network and have meaningful conversations about the types of problems you're seeing in your day to day work. It's a great chance to learn about the novel and clever approaches your friends and colleagues are employing to develop working solutions. I am always interested in hearing what other solution architects are doing to solve the problems in their respective arenas because this gives me more tools in my bag of tricks when I'm tasked with conquering a business problem in the enterprise space. This, in turn, helps me establish my own brand which leads to a trickle-down effect with the UHCS department becoming the ultimate beneficiary – and the fact of the matter is – if UHCS looks good, we all look good.

I find that each person I interact with at the UHCS alumni mixers has some interesting story or useful tidbit of knowledge they are willing to share. It's great to hear what people are proud of, and how they are succeeding these days.

I think it's important to remember and be thankful that the Department of Computer Science provided many of us with the sturdy foundation that we've built our careers on. And at the alumni mixer you are also given the opportunity to give back to the UHCS community by sharing your knowledge with others.

So if you aren't in the habit of attending such things, let me encourage you to come out and share your experiences with the rest of us next time you have the opportunity. Who knows what may come of it?

- Michael Wright ('13)

AWARDS & GRADUATION

Student and Faculty Awards – Fall 2016

Xingliang Zou, a senior Ph.D. student, received an Outstanding Paper Award at the 20th IEEE International Symposium on Real-Time Computing. Zou is lead author of the paper, “Multi-Mode P-FRP Task Scheduling.” The conference is among the top four real-time systems conferences (the others are RTSS, RTAS and ECRTS).

“The Fire Breathing Penguins” Team of Computer Science Majors **Ryan Capece, Ansiya Arakkal, Sumaiya Asif, Benson Chu** and **Cesar Salazar** won first place in the 2017 Google Games Austin competition.

Saurabh Sogi, a computer science major, was part of a team that qualified for the finals of the NASA Space Robotics Challenge. As finalists, the team was awarded \$15,000 from NASA. Only 20 finalist teams were selected out of 92 that finished the preliminary round; 405 teams signed up for the challenge.

Zhigang Deng, professor of computer science, and colleagues received the Best Paper Award at the 30th International Conference on Computer Animation and Social Agents. The paper, titled “Topologically Consistent Leafy Tree Morphing,” was co-authored by Yutong Wang and Luyuan Wang, both Ph.D. candidates at Zhejiang University in China, and Professor Xiaogang Jin, also from Zhejiang University. In the field of computer animation, this is one of the two major conferences.

Departmental Student Awards

Best Ph.D. Student Awards

- Wellington M. Cabrera
- Pengfei Dou

Best Junior Ph.D. Student Awards

- Shahryar Baki

- Fan Yang
- Yuting Zhang

Best M.S. Thesis Student Award

- Mohammad Mainul Islam
M.S. Advisor: Ioannis Kakadiaris
Thesis Title: “An Augmented Reality Application for Visualizing Anatomical Data”

Best Ph.D. Thesis Student Award

- Yu Li
Ph.D. Advisor: Albert Cheng
Dissertation Title: “Theoretical Fundamentals of Real-Time Virtualization from the Resource Management Perspective”

Ph.D. Showcase Winners

- Prasha Shrestha
- Nikoloas Sarafioanos
- Seyyedeh Mirsharif

University Staff Awards

Elizabeth Faig, Graduate Admissions Advisor, received the UH President’s Excellence Award. This award, which comes with a \$1,000 stipend, recognizes staff for meritorious service, dedication and contribution to the University beyond the normal job requirements and expectations.

University Teaching Excellence Awards

Nouhad Rizk, Instructional Associate Professor and Director of Undergraduate Studies, received the University of Houston’s Teaching Excellence Award for Instructional/Clinical Faculty.

Spring 2017 Graduates

B.S.

Nouhou Abdoulaye
Omokorede Allen
Dana Rajeh M Alsagheer
Niloofar Amjadi
Edward Ansong
Darya Balybina
Michael Beasley
Katherine Benitez-Vasquez
Andre Boateng
Ryan Bump
Ryan Capece
Linneo Capellan
Stephen Carver
Henry Chau
Narciso Diaz
Matthew Dickens
Tuan Do
Nicholas Edmonds
Salim Alejandro El Awad
Ibrahim

Ahmed Said Mohamed
Gouda Elnoamany
Ali Elsaadi
Hector Flores
Tyler Garner
Sean Graham
Rick Gray
Brandon Guyton
John Hudson
Jarod Jett
Andrew Keithly
Dolly Khouphegphet
Jennifer Kieu
Benny Kitchell
Jose Isaias Lagman
Josef Lamell
Thomas Laroche
Mikel Leu
Jiang Li
Nixon Mathew
Eduardo Miranda
Elizabeth Morgan

An Quoc Nguyen
Michael Nguyen
Lauren Oneal
Reza Parvasi
Donna Larita Marie Paz
Khoi Pham
Carlos Puerta
Erphun Ranjbar
Raymund Riegl
Muhammad Bilal Sadiq
Arturo Salazar
Bertol Salgado Bustamante
Nidhin Sam
Yichuan Shi
Ahmed Sleem
Myron Smith
Michael Spurgat
Aaron Tedone
Hue To
Brian Tran
Johnathan Tran
Khanh-Linh Tran

Nicholas Troutman
Sai Vadlamani
Jairo Vera
Ellie Vo
Rashan Whittaker
Austin Wiegel
Kevin Yu
Xin Zhou
M.S.
Jackson Olive Aluri
Karthik Bibireddy (w/thesis)
Karthikk Dhandapani
Prakhar Sunil Doshi
Anupam Gupta
Mohammad Mainul Islam
(w/thesis)
Abhay Kumar Iyer
Sreekar Reddy Jammula
Jonatious Joseph Jawahar
Akansha Kalra
Thibault Kensicher (w/thesis)

Priya Kumari
Vishal Kuppili
Kranthi Kumar Kusumuru
Huijie Li (w/thesis)
Eduardo Augusto Lopes
Xi Lu (w/thesis)
Sajiva Pradhan
Indu Sankaranarayanan
Chen Shen (w/thesis)
Sonia Ravi Shirwadkar (w/thesis)
Zhaoxin Sun
Lakshmi Prasanna Kumar
Reddy Yarram
Tejaswini Yarramaneni
Ph.D.
Wellington Marcos Cabrera
Arevalo
Shweta Jha

CONTACT

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Submit News

Please submit Alumni News to csnow@cs.uh.edu.

For information on upcoming alumni events, join the **Computer Science at University of Houston** group on LinkedIn.

Contact Us

Department of Computer Science
501 Philip G. Hoffman Hall
Houston, Texas 77204-3010

P: 713.743.3350 - **F:** 713.743.3335
www.uh.edu/nsm/computer-science/

