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On 50 Years: UH Computer Science



Fifty years – what a milestone for the UH Department of Computer Science!

It is hard to imagine a world without personal computers, tablets and smartphones, but such was the case in the early 60s. The

first university computer science departments were organized in 1962, and the University of Houston quickly joined the movement, naming its first chair of computer science in 1967 – Elliott I. Organick. At its start, the department had eight faculty members and a handful of students.

Organick led the way in creating instructional material for this fledgling field as a co-author of the first textbook on computer science as a subject: *Computer Science: A First Course*, published in 1969. The book was used by most new departments

springing up around the U.S.

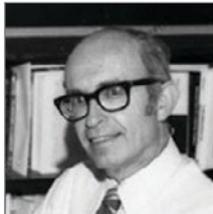
Much has changed in 50 years. Now, 34 full-time faculty lead courses and programs, and 1,232 students are enrolled in computer science B.S., M.S. or Ph.D. programs.

Computer science faculty and students are involved in far-reaching projects that impact our world. Key areas include data mining, machine learning, natural language processing, text mining, artificial intelligence, cybersecurity, biomedical imaging, and computational physiology and psychology.

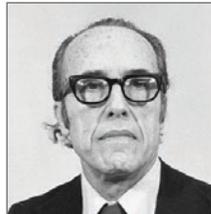
Congratulations to the department on its 50th anniversary! What will UH computer scientists have created for our world in the next 50 years?

- Dan E. Wells, Dean, UH College of Natural Sciences and Mathematics

Computer Science Chairs: 1967–2018



Organick



Newhouse



Sibley



Osburn



Pyle



Johnson



King



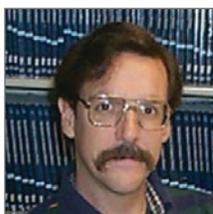
J. Huang



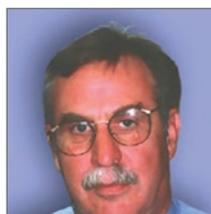
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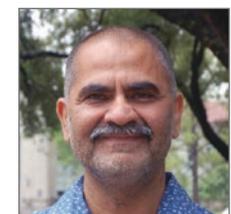
Fitzgibbon



S. Huang



Garbey



Subhlok

History of UH CS

Part 1: The Beginning

By the mid-1950s, the computer industry had passed its infancy. It had achieved distinction as a vigorous new sector of technical innovation and achievement. Several important U.S. companies, notably IBM, Sperry Rand, Honeywell, Burroughs, and GE, offered a variety of electronic products of varying speeds and capacities.

Universities responded by creating courses to train users. The new bi-monthly magazine, *Datamation*, mentioned Arizona State University as a foremost example of curriculum innovation. But, there were no computer science departments as such.

The creation of such departments was a subject of discussion. George Forsythe of Stanford and David Young of Texas subscribed to a particular model to follow. These departments should offer a technical equivalent to the M.B.A. The curriculum would train holders of B.S. degrees in the additional areas of knowledge required to manage and use the new technology.

Stanford and Purdue staked competing claims to having the first computer science departments. The year was 1962. UH did not follow until 1967 when Elliott Irving Organick was named as its first chair.

Organick offered the University a distinguished background. His Ph.D. was in chemical engineering from the University of Michigan. He had been a member of the secret Manhattan project during World War II. He came to UH in 1955 as an associate professor of chemical engineering to work in the computing center. By 1960, he was the center director, and in 1963, he was promoted to the academic rank of professor. He held the title of chair of computer science from 1967 to 1969, but took a leave of absence in 1968 to spend a year at MIT on project MAC.

The Multics operating system of project MAC revolutionized computing by connecting computing with communications. A Honeywell mainframe was front-ended by a battery of teletype machines. Input to the computer was from the teletype keyboard, not from a deck of punched cards.

Each user of the computer had his own teletype and used it as if no one else were on the machine. The operating system provided high-speed time sharing that allowed each user the freedom to ignore other users.

The operating system protected each user's files and memory allocations. It also acted as the guardian and scheduler of all machine resources.

Multics was not the only interactive operating system being produced at this time. Bell Labs was creating one for the new small computers being produced by the new Digital Equipment Corporation. This OS was designed for single users and was thus named Unix.

Organick published the definitive account of Multics in *Multics System: An Examination of Its Structure*, published by MIT Press in 1972.

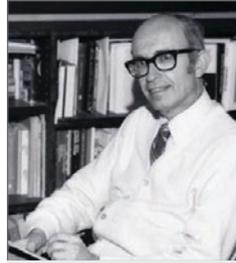
He was also co-author of *Computer Science: A First Course*, published by Wylie in 1969, the first textbook on computer science as a subject. This book became the de facto standard text for most new departments as they sprang up around the country. One of the other authors was Alexandra Forsythe, wife of George Forsythe, the

founder of Stanford's department.

Organick's technical biography, published shortly after his death, can be found in Lindstrom, Gary, "Elliott I. Organick: 1925-1985," *Comm. ACM*, Vol. 29, No. 3, Mar. 1986, p. 231.

Part 2: The First Years

The first university catalog listing of UH Computer Science as an academic department was 1968–69.



Elliott Irving Organick,
the first Chair of
Computer Science
department

But, how difficult had it been to put this "department" together? Where did the professors and teachers come from? Where did the curriculum come from? Where did the infrastructure come from, and where did the money come from?

On an even more basic level, what precisely was computer science?

Help on these fundamental issues came from the experts. For example, in May 1966 Stanford produced Technical Report CS39: *A University's Educational Program in Computer Science*, by George E. Forsythe. In

it, Stanford's graduate CS program was laid out in detail. Forsythe also gave his definition of the subject and where it should fit within a university.

I consider computer science in general to be the art and science of representing and processing information and, in particular, processing information with the logical engines called automatic digital computers. Computer science deals with such related problems as designing automatic digital computers and systems, the design and description of suitable languages for representing both processors and algorithms, the design and analysis of methods of representing information by abstract symbols, and of complex processes for manipulating these symbols.

One thing computer science is not: it is not merely the union of the applications of a computer to diverse problems. Rather, the core of the field is application-independent and rather abstract,

Probably a department of computer science belongs in the school of letters and sciences, because of its close ties with departments of mathematics, philosophy, and psychology. But its relations with engineering departments concerned with systems analysis and computer hardware technology should be close.

The undergraduate curriculum was derived easily from "An Undergraduate Program in Computer Science — Preliminary Recommendations" published in *Comm. ACM* in September 1965. The blue ribbon committee responsible for this report had been working on it for three years and included David Young of University of Texas.

The money for the UH program came primarily from the State of Texas whose legislature admitted UH as a state-funded institute of higher learning in 1963.

The initial CS faculty at UH was the following: *Chair* E.I. Organick; *Professors* Newhouse, Organick; *Associate Professors* Channen, Sibley,

Wyatt; *Instructors* Hall, Shores; *Lecturer* Johnston.

So, the department had: 2 professors, 3 associate professors, 2 instructors, and 1 lecturer. (delete of space needed)

Albert Newhouse fled Germany during the dark days of Nazi domination. After finishing his Ph.D. in Chicago, he got an appointment in UH's math department. His interest in computers led to his departmental transfer. He helped run the department as Director of Undergraduate Studies and served a temporary appointment as Chair. He retired at age 65 in 1978.

The associate professors were hired from industry. Two of these remained with the department for several years and deserve comment.

Bob Sibley was hired from IBM where he worked in Armonk, NY. Sibley was a specialist in computer languages. At IBM, he invented and managed a team that developed a "compiler-compiler" called SLANG (not to be confused with later systems of the same name). He held a master's degree from David Young at UT. Sibley stayed with the department until 1980.



Joe Wyatt, the professor of Computer Science

Joe Wyatt was with the department for seven years beginning in 1965. He was hired from General Dynamics in Fort Worth. Like Sibley, he had a B.S. (from TCU) and an M.S. (from UT) in math. Wyatt served half-time in CS and half-time as Director of UH's Computer Center. Wyatt left UH for Harvard where he rose to the rank of Vice President of Administration. He then became Chancellor of Vanderbilt University for 18 years.

Part 3: The Seventies (1971-1979)

In 1973, the department was five years old, Duane Pyle was the department's fifth chair, and I joined the department.



Duane Pyle

Pyle had been imported from Purdue University, whose computer science department claimed to be the first in existence, and he had been a charter faculty member. Purdue's Department of Computer Sciences was preceded by a Computer Sciences Center. Pyle was assistant director of that center in 1961-62 and became assistant head of Purdue's department from 1965-69.

He was appointed CS chair at UH in 1971 and served as professor of computer science

until his death in 1993.

Pyle's field of research was linear programming. He worked on the hot topic of finding solutions via interior methods. He also got interested in using the new Cray and CDC vector supercomputers as tools for such methods.

In 1973, the department was housed in the library basement. The two-person departmental staff consisted of an office manager, Alice Sands, and her assistant, Dorothy Dobson. Professors created overhead transparencies for classes and used mimeograph machines to copy quizzes.

There was one central computer system, a Univac 1108, housed

in the basement of the Ezekiel Cullen Building. I/O was by punched cards and high-speed printers.

The department offered an M.S. that required a thesis. Houston's high-flying petroleum industry loved this degree, so there were many part-time students and night classes. Upon completion of this M.S., successful candidates could expect a 15% pay increase and a fast track into management. The UH business school required all its students, regardless of major, to take the department's introductory course. It was taught three hours per week in a large auditorium with breakouts into much smaller laboratories.

There were no B.S. or Ph.D. options. However, the department had an undergraduate curriculum and some special graduate courses that combined a few of the undergraduate courses. M.S. hopefuls took these to gain the required undergraduate background.

I entered this situation with plenty of background. Having started in computing as an IBM 704 programmer at Chance Vought Aircraft, I then spent 10 years at IBM in ever-advancing technical positions. I graduated from IBM's Technical Research Institute, the company's internal graduate school, won an IBM Resident Graduate Fellowship, and spent four years at University of California, Berkeley, getting my Ph.D. in applied mathematics (specifically, numerical analysis) while on full salary.

Then, I worked at a newly founded research center in Houston that encouraged me to publish my results and had a 40% appointment in Rice's mathematical sciences department. In addition, I became Executive Vice President of IMSL, a software company that built subroutine libraries in mathematical and statistical areas that are still commercially available today.

But, I wanted to be a full-time professor, and Duane Pyle gave me that chance at UH CS. I was hired as an associate professor with a two-year tenure-review period. The main focus for my first year was to get a significant NSF grant.

Academic year 1974 began with a big surprise for me. CS was in UH's College of Arts and Sciences with an Assistant Dean for Natural Sciences and Mathematics, Hugh Walker. Before the semester began, Walker asked me if I would be chair of CS. He and Pyle had come to an impasse regarding who should run the University Computing Center. Pyle insisted on following the Purdue model, but UH objected due to increasing use of the center by many different fields.

Walker insisted I was the only internal candidate he was willing to accept. It was me or another outside search. It took me several days, a good bit of one-on-one conferencing, and a good bit of soul searching. The worst thing: I was unable to speak with Pyle, who was on vacation. I accepted, but Pyle never completely forgave me.

There were other surprises. The department was moving to a new classroom and office building (later named after Philip G. Hoffman). There was a special \$30K budget for new equipment, and we had to specify how to use it ASAP. Five faculty were up for tenure, and the departmental recommendations were due shortly.

On a happier note, my NSF proposal that included four faculty was accepted. The project's focus was the application of splines to control methods for optimizing a new MIT model of the U.S. economy. We worked with MIT's economics department, spending

Continued on page 4...

Cont'd: History of UH CS

some summers in Cambridge. This was the only major grant the department received that year.



Olin Johnson in Chair's Office, 1975

Needless to say, 1974 was a trying year, but we got through it. We now had four newly tenured faculty: Robert Anderson (AI, theorem proving), Olin Johnson (numerical analysis, systems), Willis King (architecture, systems), and J.C. Huang (software engineering.)

Other events during my tenure as chair were more fun. In 1976, ACM's Annual Convention, featuring the acceptance speech of the Turing Award winner and the annual computer chess competition, was

held in the new Houston Hyatt. I served as General Chair.

The department was host to many important visitors, including Turing Award winners Jim Wilkinson (numerical linear algebra) and

Vel Kahan (IEEE floating point standard). We also had the pleasure of a presentation by Grace Murray Hopper. While I drove her to the airport, we discussed her talk including her famous story of the first computer bug and her props of the millisecond and the microsecond.

- Dr. Olin Johnson

About the Author

The History of CS is a three-part series that relates the story of the birth and rise of Department of Computer Science at the University of Houston.

The articles are written by Dr. Olin Johnson, Professor Emeritus, who served as UH Computer Science faculty for more than 40 years (1973-2015). He is also the author of the 2001 historical novel "The Newlanders".

The Early Years (1967-71) – A Tumultuous Beginning

The department was established in 1967 after the University was granted the authority to award a master's degree in computer science by the Texas Higher Education Coordinating Board. We celebrate the "50th Anniversary" this year presumably because, like many things in computer science, our count starts from 0.

At the time, there were only about 10 academic departments formally named "Computer Science" in the nation. We were the first in Texas.

Computer science was one of 24 departments in the College of Arts and Sciences, the largest college in UH, comprising about 50% of its faculty and students. We taught a number of undergraduate courses even though only the master's degree was offered.

The department's founding was mainly attributable to efforts of Professors Organick and Newhouse. With the job accomplished, Organick took a sabbatical in 1968, and Robert Sibley served as acting chairman. Sibley and Newhouse made a major recruitment effort, including trips to universities all over the country.

The result was more than anyone could have expected: six new faculty. When Organick returned from his sabbatical, he found practically a new department. He was almost a stranger to the department he chaired.

The six new faculty joining in 1968 were Terry Walker, hired as an associate professor from University of Alabama, and five assistant professors: Marcel Meicler and Robert Plummer (University of Texas at Austin), J.C. Huang and Willis King (University of Pennsylvania), and John Lenahan (University of Wisconsin at Madison). The new faculty worked on research topics that would today be considered central to computer science or computer engineering, even though

none of them had a degree in computer science.

In the first years, each faculty member was required to teach three courses per semester. Junior faculty had their hands full preparing lectures and teaching courses, not to mention establishing their research programs. Being new and inexperienced in academic politics, they were soon overwhelmed when they found themselves in the middle of a power struggle among the senior faculty.

In 1969, it was the third year of the chairman's term, and the college bylaws required that the faculty be polled to select the next chairman. The position was highly contested. On top of that, both Organick and Walker had written an introductory computer science textbook, and they both wanted to use their own book for the department.

The faculty could not reach a consensus on a single candidate, so Dean Alfred Neumann appointed Hobart Osborn, a professor of psychology with a joint appointment in the department, to be acting chair for 1970-71.

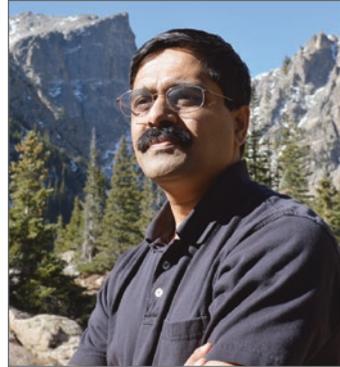
Osborn was given the job of finding a new chairman externally while the emotions of the senior faculty were still running high. Duane Pyle from Purdue University was hired as the new chairman in 1971.

Thus, the department had a change of leadership in each of its first five years.

- Willis King, Former Chair and Professor Emeritus

Celebrated Author and ‘Accidental’ Computer Scientist Turns 50

An uncle, an English professor, introduced Venkat Subramaniam to his first programming experience. In high school, he had excelled at engineering drawing, a discipline in which spatial reasoning and



Venkat Subramaniam

imagination are needed to draw the same object from various perspectives. Subsequently, when he joined Venkateswara College of Engineering near Chennai, he had about a year to choose his major.

“I had lots of interaction with a mechanical engineering professor, who took an interest in me,” Subramaniam said. Working closely on applied mechanics problems with this professor during his first year, and having no corresponding computer science courses to

expose him to programming, it “was almost a foregone conclusion” that he would pursue mechanical engineering.

Destiny intervened. Subramaniam was fairly comfortable with mechanical and electrical engineering, but computer science was relatively new in the region. He found it intriguing. He did a flow chart for a problem on a piece of paper with his uncle, who had a spectrum computer, and would write programs in the evenings. He was hooked. He wanted to find out more, so he jumped into computer science.

He was encouraged to apply for higher studies abroad by a selfless professor who worked closely with him and his peers on a capstone project in VLSI design. Subramaniam applied to U.S. universities and received admission offers. The presence of an uncle in Houston beckoned Subramaniam to the oil and gas hub. He joined the M.S. program in electrical engineering at UH, finishing his thesis in less than a year.

“With the advisor I had and the research topic I chose, I was doing more computer science than anything else,” he said. In his last semester, he signed up for two computer science courses.

One was operating systems taught by Jehan-Francois Paris, who made the subject so enjoyable that Subramaniam has fond memories of the course more than a few decades later. “He also taught us how to approach teaching and keep the conversation engaging,” he said.

The following semester he joined the computer science Ph.D. program. “That is one of the wisest decisions I made in my professional career,” he said.

He was interested in data structures, algorithms and computer architecture. A paper by Prof. Kam-Hoi Cheng on data structures for parallel computing really intrigued him. As a result, he chose Cheng as his advisor. His dissertation was on renewable data structures.

“Not only was he very helpful on the topic, but he also helped me become a better person,” said Subramaniam, who shared a story of how Cheng gave him a ride to and from UH for more than a year because he lived on Cheng’s daily commute route.

During his Ph.D., he was a grader for the computer architecture course taught by J.C. Huang, who asked him to conduct a review session for an exam. Subramaniam had a weekend to prepare, and

even though he had never read the textbook being used, he handled the session with so much aplomb and expertise that students came up to him and thanked him for the great job. Huang was impressed by his ability and recommended him for teaching.

Subramaniam has never looked back since becoming a mentor, teacher and author of 10 books, many of them award winning.

“Each award came for a different reason, and recognizes the effort put in and the value created,” he said. Still, Subramaniam is proud of the Teaching Excellence Award he received from UH CS.

Subramaniam turns 50 in June. He plans to conduct 50 seminars in 50 different cities this year. You can catch up with him at a course in the CS department or at one his training sessions. Way to go, Venkat!

Q&A with Venkat Subramaniam

Q: What advice would you give Ph.D. students?

A: I think if it as P for perseverance, H for hard work and D for determination. Learning does not stop, and make sure to ask for help. One should approach people with the right attitude and not be shy.

Q: Which book gave you the most satisfaction?

A: It is like asking me to choose between my children. Every one of them was so satisfying to write.

Q: Any experience from your trainings that you would like to share?

A: When you offer training, people want to apply it in their day-to-day work. Focus on the most important, valuable and practical things. Inspire people. In the words of Plutarch, “A mind is not a vessel to be filled, but a fire to be lighted.” Once, a participant told me he was not able to sleep after going through one of my training sessions!

Q: What advice would you give to budding authors?

A: Think about the story you are going to tell. Break it down into pieces and work on a piece or section every day. I write all my books in two weeks of intense effort from morning to night. However, the preparation for the book has happened in my mind for couple of years before that.

- Rakesh Verma, Professor of Computer Science and Faculty Advisor of Ethical Hackers Club

CS Alumna Wins Undergraduate Research Mentoring Award

Catherine Putonti, who received an M.S. and Ph.D. in computer science from UH in 2004 and 2006, was awarded the Computing Research Association's Undergraduate Mentoring Award, in recognition of her efforts to provide exceptional mentorship. Of the 45 undergraduates she has mentored, 16 have continued on to graduate programs in computer science, bioinformatics or computational biology.

As an associate professor at Loyola University Chicago, Putonti holds dual appointments in the Departments of Computer Science and Biology. Her current research, which integrates applied computer science with microbiology, focuses on the evolution of virus-host compatibility, as well as the role of bacteriophages in regulating microbial populations.

Putonti's dual interest was sparked during her early days as a CS graduate student, when she took a bioinformatics course.

"Taking that course, I knew immediately it was what I wanted to do," Putonti said. The course instructor, research professor Yuriy Fofanov, later became her advisor. For her dissertation, Putonti

designed algorithms to detect bioterrorism agents.

"Graduate school at UH was a fantastic experience, because of the diverse backgrounds of students and faculty," Putonti said. "It was a great environment to learn in."

Given that she didn't have a formal background in biology, she took additional coursework, eventually finishing a master's degree in biology at UH in 2007.

During her time as a CS graduate student, Putonti was responsible for mentoring other students, developing and writing grants, as well as cultivating outside collaborations. All of this experience served her well in the transition to being a faculty member.

"All of the skills I needed to transition from being a graduate student to a faculty member, I learned during graduate school," Putonti said. "When I moved to Loyola, I just continued doing the things I'd been doing at UH."

- Rachel Fairbank

Congratulations and Other Thoughts

I speak often about the value the Department of Computer Science imparted upon me during my tenure as a student from 2010 to 2013. It is hard for me to articulate how much my degree means to me. Attending UH and excelling academically in Computer Science altered the trajectory of my personal and professional life in a profound and probably unbelievable fashion. I often juxtapose such statements against what little value I garnered from my degrees from the University of Texas ('03) and UH Law Center ('07). Certainly, I was at drastically different points in my life each time I ventured into the realm of higher education; the fact



Michael M. Wright ('13)

remains that my degree in Computer Science from UH brings me more pride and satisfaction – not to mention financial gain – than the other two degrees combined.

I am proud to be an alumnus. My fellow members of the board of the Computer Science Alumni Association feel the same. The department provided the foundations upon which we have built successful and fulfilling careers. When I think about the department in my capacity as a board member, I confess that much of my thought is prospective. As members of the board, we are often planning what we can do next; that is, what we can do to ensure the UH CS can fully harness the potential of its students, faculty, and alumni. We sometimes forget to reflect on what has already been done, and particularly, what has been done well. I would like to highlight some aspects of the CS Department that are exemplary, and then provide some aspirational goals each of us can strive for to make the department truly outstanding. I will try not to get too preachy, but consider this notice that I may jump on my soapbox for a minute.

The Students

When you take away everything else, from an employer perspective, universities in general are factories. The products, of course, are the potential employees being shuttled from the relative security of adolescence through the vestibule of college life and shoved, somewhat brutally, but not without ample ceremony, through the door of adulthood into the workforce. In my opinion, the students we hire out of UH CS are some of the best prepared for the rigors of professional life. Some of that has to do with how selective my company is when hiring – we strive to only hire the best of the best. But, when I look around at work and compare the UH CS graduates with their counterparts from schools like Texas, A&M, and Baylor, I can't help but marvel – and get a little peeved – at how little recognition the department gets for pumping out such a superior product. Maybe my company is an outlier, but I believe it is not.

One goal I would like to see achieved regarding students is a departure from the myth that some individuals, and even companies (looking at you, Google), keep perpetuating that grades do not matter. This is false. Even Google hires only the top graduates in the aggregate. One of the core tenets of recruiting at Google is to "hire only people who are better than you." In tech, a lot of companies have adopted this mantra or a version of it. And it turns out, high GPA correlates with "people who are better than you." A GPA does not just measure your ability to take tests. I hypothesize that it measures something else, something the psychological world calls "grit." And it turns out that gritty people make great employees, which is what employers are looking for. Most employers who want to grow their businesses are not looking for cogs in a machine; they are looking for drivers, innovators, and leaders. Some folks say grit is the key ingredient in all these attributes, and I believe GPA is one

way grit can be estimated. Of course, this only works if we can trust that a student actually earned their GPA, so look down in the faculty section for some thoughts on academic dishonesty.

Beyond my proposed correlation between GPA and grit is an even more pragmatic argument that the phrase “GPA doesn’t matter” is false. The top companies hire the top students. Companies evaluate what it means to be a top student in many ways, but one of the easiest is through GPA. I would argue that if a company is not hiring students with high GPAs then it is not a top company. This applies to the companies that do not look at GPA during the hiring process equally as to those that do. The result is the same; kids with high GPAs go to top companies, and everyone else gets the jobs that are left over. Maybe that is not fair, maybe it is, but that is how the world works, in my experience. I would be very happy if the phrase “GPA doesn’t matter” was never uttered again in the hallowed halls of Philip G. Hoffman building – but that is probably an impractical wish – so I will be happy if we can just append “...after your first job” to the phrase and call it done. Of course, we’ll have to also live with the caveat that “...after your first job” might be too late to set your career on the meteoric trajectory that I think we all desire.

The Faculty

I have a lot of conversations with potential employees from UH CS about professors. Many of the professors I took classes from are still teaching, so I have some common ground upon which to stand. Even though not every professor is universally loved, with rare exception, I can truly say the professors made me a better, more complete individual through their coursework. I distinctly recall being in Dr. Ordoñez’s Data Structures and Algorithms class and thinking “this is why I am here; this class will make me a better developer.” And it is true. That class was the first of several life-changing classes for me. The work was hard, but fair, and more importantly it taught me valuable skills that I still use every day. At times, I find myself waxing poetic about that class, and I lament the fact Dr. Ordoñez only taught one undergraduate class while I was in school, and only every other semester to boot. I personally think Dr. Ordoñez should have more exposure at the undergraduate level because his class did not just teach me the fundamentals of data structures and algorithms, it taught me that hard work is rewarded. That is an idea we should be implanting in all students’ heads every opportunity we get.

Venkat’s Programming Languages class was another one. That class, with its heavy emphasis on the functional paradigm, developed an entirely new way to solve problems in my brain. Several of the ideas have direct analogs in the solution architect arena – especially in the current environment of serverless computing in the cloud. It is an eye-opening course which I highly recommend to all students. I understand that not every professor can be Dr. Ordoñez or Venkat, but I believe the department should strive to have every class touch the lives of the students like these two touched my life.

I have several goals I would like to see the faculty work toward, but at the risk of ruffling some feathers, I will limit this section to a pretty touchy one that comes up from time to time when I speak to current and recently graduated students: academic dishonesty. There is a perception among this group that the faculty does not do enough to address cheating, and that the penalty for getting caught is either not steep enough or not enforced. Furthermore, the

environment is almost welcoming to those students who wish to cheat because the content of exams and homework is not refreshed often enough, or when it is, the questions are drawn from old exams or homework assignments which live on in perpetuity in the cloud, having been collected over the years and made available to a select group of students who happen to know the wrong people. This perception needs to be investigated and, if there’s anything there, swiftly addressed. It would be nice if students would realize that cheating does not help them in the long run – in fact it harms them – but I feel this is unattainable in the short term. Employers are quick to realize when capabilities do not match GPAs, and there are very few explanations for this other than cheating. When employers come across a recent graduate like this they get a black mark, but the school they came from also gets a black mark. I think it would benefit everyone connected with UH CS if some additional rigor was put into refreshing homework assignments, refreshing test content, and enforcing strict penalties for those caught cheating. Reasonable minds could differ, I suppose.

The Alumni

One of the most surprising things I found after graduating was the connection the alumni network shared. Some of that connection centered around various grueling tasks of questionable value that were required for graduation, and some of it centered around the varied and interesting work we were all doing in Houston and around the world. It surprised me that there was no alumni association dedicated to the Department of Computer Science, so when Dr. Yun and Dr. Subhlok asked me and several others to look into forming one, I jumped at the chance. I value my connections through the department and one of my personal goals is to grow the network and fill it with people who want to see the department achieve success and be recognized for the fantastic work it is doing, not just at the undergraduate level but at all levels.

With that goal in mind, one thing we can do better is to give back. Whether through our time, our leadership, or our finances, the department needs our support. Sometimes it takes external pressure to get things moving in the right direction, and the alumni are a great source of that pressure. Maybe it sounds a bit nefarious when I say it that way, but I do not mean anything insidious by that comment. I just mean that the more involved we are as alumni, the more conversations we have with students, faculty, and each other, the more progress we can make in our goals, and the better the department will be in the long run.

Congratulations Are in Order

The Department of Computer Science has given me an amazing gift and has been giving that gift to students, faculty, and alumni alike for 50 years. For this, we should be raising our glasses and toasting the success. Let’s take some time to enjoy this, we deserve it. But let’s not rest on our laurels. There is real work to be done to keep pushing forward to make the next 50 years even more fruitful than the last. Cheers.

- Michael M. Wright (’13), Co-Founder UH Computer Science Alumni Association, and Senior Manager, Pariveda Solutions

Computer Science Career Fair – My Perspectives

“Another successful CS Career Fair!”

With satisfaction, I say those words to myself at the end of Fall 2018 UH Computer Science (CS) Career Fair.



Chang Yun

My watch indicates that it is already after 2:30 p.m., 30 minutes past the official closing time. Several recruiters from the 45 companies attending are still on the floor of the Student Center Houston Room, one of the few rooms large enough to accommodate that many companies and approximately 400 students. Recruiters are still talking with students, preparing to leave the floor, or reading through stacks of resumes they have received. I am pleased so many companies attended our

Career Fair to recruit our students. This is an undeniable proof that the CS department produces a large number of quality computer scientists annually, resulting in dozens of companies repeatedly and enthusiastically attending our Career Fairs. I am confident many will return, as long as the quality of our CS students remains high.

After a long conversation with one of my former students who came as a recruiter, I look around to see if anyone is left on the floor. I see four recruiters from Pariveda Solutions busy sorting through the many resumes received today. Two are my friends – Michael Wright ('13) and Muhammed Naviwala ('14) – whom I would encounter often on the 5th floor of Philip G. Hoffman Building, the home of the CS department.



Fall 2013 UH Computer Science Career Fair

While looking at them, I think back across the past career fairs to the beginning. My memories of past CS career fairs are vivid; I was deeply involved in organizing and hosting them since becoming the CougarCS faculty advisor in 2011. Prior to 2014, CougarCS organized the career fairs alone. Since 2014, career fairs have been co-led by CS department and CougarCS, and I have supported CougarCS' efforts to run successful career fairs.

CougarCS hosted the first career fair in 2005 while I was still a UH Ph.D. student at UH. Thomas Nguyen and Tina Zaman, two CougarCS

founders who served as presidents in 2005 and 2006 respectively, led CougarCS to host an inaugural career fair with the notion of hosting a career fair by students and for students. I wonder if they foresaw the future of our career fair. They deserve full credit for the work to host the first-ever career fair from scratch. Their vision spread to future CougarCS leaders to continue hosting the career fair for fellow students.

The first Career Fair was humble in nature compared to what we have today. Nine companies (including two regular career fair attendees – Chevron and JP Morgan Chase) and about 100 students attended the inaugural fair. It was held at World Affair Lounge, an open area in the University Center Underground. After the first successful career fair, CougarCS continued to hold the fairs at the UC's Cougar Den, the largest of the underground rooms.



Fall 2014 UH Computer Science Career Fair

In the early years, however, I was not interested in the affairs of CougarCS or the series of Career Fairs it hosted. It was not until 2011, when I became the CougarCS faculty advisor, that the organization and the career fairs got my attention. I first worked with CougarCS organizing/hosting team in Spring 2012. Under the leadership of Jimmy Garcia, CougarCS president in 2012, the Career Fair was hosted at Cougar Den. The numbers did not increase significantly from the inaugural one – about a dozen companies and 150 students.

This was the first time I met with the company recruiters and got their assessment of the Career Fair and the CS students they met. That was the last career fair hosted at Cougar Den. UC renovations began in 2012 and resulted in the removal of Cougar Den. The renovation went on for two years, severely restricting space in the UC for the Spring 2013 Career Fair. For this reason, UH graciously assigned us a meeting room at Hilton UH for the Spring 2013 Career Fair.

Once elected CougarCS president, Gabriel Ohlson (2012-2014) did a phenomenal job leading CougarCS to improve the Career Fair. CougarCS deliberated on ways to improve the overall quality of the Career Fair and, subsequently, attract more companies. First on the agenda was to determine the designated location where we should regularly host our Career Fair. At the end of Spring 2013, we recognized most companies preferred us to continue hosting it at the hotel, prompting us to do our best to host all the upcoming Career Fairs at the hotel.

Second, was to improve the preparedness of students attending the Career Fair. Until then, unprofessional attire and poorly prepared resumes were considered major problems both by the recruiters and the department. Starting with the Fall 2013 Career Fair, we strictly

enforced the existing rule requiring professional attire for all student attendees. Even today, this rule remains in full effect, and we only allow students with business professional attire to enter the Career Fair. To help our students improve their resumes, we worked with several companies to host resume workshops. The students were given opportunities to learn how to prepare their technical resumes properly for the upcoming Career Fairs.



Spring 2015 UH Computer Science Career Fair
Pictured (from left to right): Jophy Johnson, President, CougarCS 2015; Maria Briceno-Rojas, President, CougarCS 2014; Eric Siebeneich, Vice President, CougarCS 2014-2015; Dr. Chang Yun

Third on the agenda was to increase student attendance, since it had remained stagnant. CougarCS officers and I began actively advertising the career fairs in CS classes. The last agenda item was to consider the possibility of CougarCS and the CS department jointly hosting the Career Fair. The collaboration was proposed in an effort to organize and run the Career Fair in a more professional manner. This was not resolved during Gabriel's tenure, but discussions continued onto succeeding CougarCS presidents.

Our efforts to improve the Career Fair materialized in Fall 2013. For the first time, more than 20 companies and 170 students attended. The recruiters responded positively to the overall improvement of the students and the fair itself. Most responded that they were very satisfied with the students and enthusiastic to return for our future Career Fairs.

Improving our Career Fair continued as Maria Briceno-Rojas become the second-ever female CougarCS president. In her tenure, CougarCS and CS Department finally agreed to jointly host future Career Fairs. In Fall 2014, we successfully hosted more than 30 companies and 300 students. Thanks to our joint efforts with the CS Department, the recruiters highly rated the quality and preparedness of students as well as the professional organization and hosting of Career Fair, even though size of the Career Fair increased. The only complaint made both by the recruiters and students was that the size of room was too small to accommodate everyone. Consequently, the Spring 2015 Career Fair was held in the second largest space at the Hilton UH. The number of attendees, both companies and students, was sustained during Maria's tenure and in the tenure of Jophy Johnson.

In Fall 2016, with Ronak Shah as a new president, we moved back to the renovated and renamed Student Center. The rooms at the hotel were simply not large enough for the event. That semester, recruiters from 40 companies attended to hire our best and brightest students. In the three succeeding career fairs – Spring 2017, Fall 2018 and Spring 2018 – the number of student attendees reached and/or exceeded 400.

As I snap back to reality, I still stand on the floor of Houston Room. I look around the nearly empty room and remind myself of the more than a decade-long strides made in successfully organizing and hosting each career fair. What a humble beginning we had when it was first hosted, and how it has grown! To be exact, 600% and 400%, respectively for attending companies and students.

Faces of many who were part of this decade-plus story pass through my mind – students, recruiters, staff at CS department, and CougarCS presidents and officers. What a run we have had! I look forward to working with both CougarCS and the department to ensure we continue the tradition of hosting successful career fairs that serve and benefit our current and future students.



Fall 2017 UH Computer Science Career Fair

As I leave the floor, I say this: "Now that I think about it, 45 companies showed up today. It is, so far, the largest number of companies attending our career fair. Perhaps, we will have 50 companies next year, with nearly 500 students."

- Chang Yun, Instructional Associate Professor and CougarCS Faculty Advisor (2011-present)

CougarCS – Recollections from Past Presidents

Thomas Nguyen (Founder and President, 2005)

The idea of a computer science club started out with a few classmates who wanted to study together and play video games between classes. Our first meeting was February 1, 2005. Membership was \$20 (free t-shirt!), our only plan was to put together a resume book, and we didn't have any officer positions at the time. During our meetings, we brought in guest speakers from the Houston area to talk about what it's like to be a software developer in the industry, provided pizza sponsored by the department, and kept the option open to go bowling afterward. It took us a year to organize our very first Career Fair which was held on February 21, 2006. Nine companies participated at tables outside under the PGH breezeway!

It's amazing to see how CougarCS has evolved and great to hear how much growth has happened throughout the years!

Jimmy Garcia (President, 2012)

My tenure as CougarCS President was personally rewarding. I started out in the club as Historian – a fancy name for the guy who takes pictures. With that position, I was always in and around the club.

The following semester I was nominated by the previous president Michael Slater to take over. Elections were held, and I was elected to President. It was particularly nerve racking because up to that point I had not taken a single computer science class in my life. It was my degree, but unlike most of the people there, I didn't have the opportunity to program in high school. I took the job rather seriously and took the opportunity to soak up as much as I could from my classmates. They elected me to run the club, but I was big on it being our club and not just mine.

During my two semesters, I focused on making a new website using our collective knowledge and setting up a new email system to reach our members. The Computer Science Career Fair moved into the Hilton during my run, mostly out of necessity, but the recruiters and students appreciated the elevated prestige of the new location. I also tried to focus on tech talks during our meetings.

My cabinet members did a great job of making the talks interactive and fun. To me, the most notable one was the day a fellow student taught us to break into a Wi-Fi router he set up in the meeting room to use the internet. Afterward, he gave the cabinet members a private lesson on how to change the password and

completely hijack it.

This knowledge share was one of my favorite things about the club. The tech world is impossibly complex and large for one person to learn on their own. Having a place where everyone could sit and share what they were into and to have fellow students be excited about it was a great part of my UH Computer Science experience. I made a lot of friends through CougarCS, friends that I still speak to frequently. It was my hope that every person enrolled in computer science would come out and experience the club once in a while, so they could have that experience, too.

Ronak Shah (President, 2016 and 2017)

As President, I also took on the responsibilities of CodeRED. To me, CodeRED was more than just an event that we organized. Going to UH Computer Science, a program that was almost always looked down upon when compared to some other Texas schools, I saw CodeRED as an equalizer between UH CS and the CS programs at other Texas schools. It was a chance for the UH program to show that we could compete with them and were on the same level.

I take pride in the fact that during my time CodeRED was able to grow into one of the largest Hackathons in the country. As it continues to grow, one cannot help but recall its humble origins – staring in the gaming lab, with a dozen or so students.

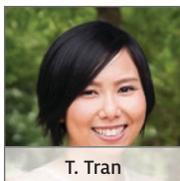
My presidency had its fair share of problems. Most of these were due to my own shortcomings as a leader. There were definitely things I could have done better. However, in the spirit of optimism, I believe that those issues were important in that they helped refine the organization.

As President, my main goal was to instill in the students of the UH CS program the idea that there was more to computer science than just attending class and getting good grades. All too often students get caught up in perfecting academic success and forget about the exploratory nature of college.

CougarCS acted as a gateway to the expanse that is technology. In a field where social skills are often the butt of many jokes, it provided a social fabric of sorts. I met many of my closest friends in college through CougarCS and built relationships that transcended my time at UH. The organization is paramount in merging academia and professionalism. I am humbled to say that I was part of such an organization.



T. Nguyen



T. Tran



M. Slater



J. Garcia



G. Ohlson



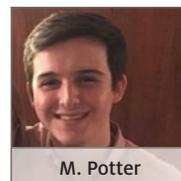
M. Briceno



J. Johnson



R. Shah



M. Potter

AWARDS & GRADUATION

Student and Faculty Awards – Fall 2017

Undergraduate Excellence Award: Julia Hofmeister; Duc Truong

UHCS Academic Excellence Award: Ioannis Pavlidis; Thamar Solorio

Summer/Fall 2017 Graduates

B.S.

Adam Able
Eduardo Aguilar
Syed Ahmed
Sadia Alam
Sumaiya Asif
Nicholas Biddle
Joshua Bird
Alexandra Bryant
Jose Cabrera
Andres Carrillo
Jacob Collins
Jonathan Cooke
Cody Coomes
Christopher Cupples

Viktor Dahbura
Krishan Desai
Tyler Do
Taqees Duka
Omar Gharandoq
Mario Gonzalez
Aaronpal Grewal
Juan Gutierrez
Benjamin Heasley
Chad Hoang
Angela Hoch
Weston Hodge
Kevin Kwan
Andrew Lehmann
Ethan Lundgaard
Justin Mangawang

Debra Mendez
Jiacheng Mo
Cole Mujadzic
Dat Nguyen
Jonathan Nguyen
Nicole Nguyen
Tin Nguyen
Ty Nguyen
Maniroth Ouk
Qaem Parasla
James Perry
Michael Pham
Sam Phan
Minnah Prufer
Janie Ramirez
Dhawal Sandesara

Alen Shaju
Jonathan Shakib
Timothy Shepard
Derreck Stellpflug
Binh Tran
Di Tran
Quang Huy Tran
Visak Varghese
Heather Vo
Kong Chung Chan
Chonghua Li
Ahmed Saeed
Adithya Srinivasa

M.S.

Yue Cao (w/thesis)

Boris Chernis (w/thesis)

Ph.D.

Olga Vladimirovna
Datskova
Pengfei Dou
Zhimin Gao
Xin Liu
Behrang Mehrparvar
Seyyede Qazale Mirsharif
Mohammad Tanvir Rahman
Muhsin Zahid Ugur
Lingfeng Zhang
Yiqun Zhang
Lei Zhang
Xingliang Zou

Spring/Summer 2018 Graduates

B.S.

Kingsley Akpan
Hadeel Abdulrahman J Al
Mubaireek
Sanford Alexander
Hassan Ghazi A Alghanim
Alishah Ali
Omar Basharat
Kyle Bingham
Jose Miguel Bitanga
Ronallini Borneo
Juan Buena
Maxwell Ciotti
Adrian Davila
Napoleon De Mesa
Alexis Diaz Martinez
Sean Donovan
Thomas Doyle
Erin Dunnahoo
Ikenna Duru
Ali Elsaadi
Jeremy Fairchild
Ryan Farrell
Ganga Vibhagini
Gangadharan
Jorge Garcia Lizarraga
Garrett George
Ryan Gonzalez
Austin Good
Leonel Gordillo
Jorge Gracia
Michael Gross
Giang Ha

Sameer Hai
Nida Haider
Brent Harris
Elliot Henriquez
Zachary Hewlett
Andy Hinh
Christopher Holley
Kyle Holub
Becky Horstman
Ali Hussain
Alaa Hussein
Bashar Ibraheem
Earnest Jammer
Shichang Jiang
Ibrahim Kobeissi
Jerry Laceyfield
Nancy Lam
Jeremy Le
Vicki Lee
Benqiang Lin
Alex Luong
Marc Magnuson
Monish Maknoja
Arash Malekzad
Chelsea Manners
Patrick McClain
Michel Medellin Michel
Jason Morales
Brandon Nguyen
Tien Nguyen
Kasey Nieman
Matthew Nyman
Brandon Okezie
Joshua Pham

Thuan Thanh Pham
Nathan Pham
Kim Pham
Etienne Pierre-Jerome
Junaid Qureshi
Vaishali Rajan
Erick Ramirez
Christian Reyes
Martin Reyes
Robert Richardson
Rolando Rivera
James Rodgers
Cesar Salazar Fuentes
Christopher Scheller
Craig Schulenberg
Muhammad Shah
Ronak Shah
Joyce Shaheen
Joshua Shearer
Bryson Sinquefield
Daniel Sitonic
Joshua Strain
James Sturges
Zehan Sunesara
George Thomas
Gregory Thompson
Kha Tran
Son Truong
Duc Truong
Detrich Utti
Veronica Vexsler
Andrew Walker
Xiaoya Wang
Shuai Cheng Wang

Paul Weber
Xing Weng
Glen Williams

M.S.

Kaushik Reddy Awala
Suyash Bakshi
Prashanth Reddy Basani (w/
thesis)
Gauri Bulbule
Chieh Chen
Suma Chilukuri
Devin Crane (w/thesis)
Devarsh Dani
Snigdha Reddy Dodla
Yamini Krishna Gollapudi
Nafisa Amir Ali Jassani (w/
thesis)
Lalitha Kalidindi
Aparna Shriraksha Kaliyur
Narayanaprasad
Guru Pavan Kumar
Kamakolanu
Sakhitha Chowdary
Kanyadhara
Yaser Karbaschi (w/thesis)
Kinjal Haresh Kotadia (w/
thesis)
Akshay Bhavani Kumar
Kulkarni (w/thesis)
Sagar Limaye
Ryan Long (w/thesis)
Mingxuan Luo
Krutarth Krishna Majithia

Vamsi Krishna Jayadev
Naidu Nagam
Irteza Nasir (w/thesis)
Vishal Kumar Pallerla
Georgios Panagopoulos (w/
thesis)
Ravali Parasa
Chandana Roopa Reddy
Rajala
Sidharth Sadani (w/thesis)
Charanteja Sakamuri (w/
thesis)
Sarthak Sharma (w/thesis)
Arjun Subramanyam
Varalakshmi (w/thesis)
Manasvi Kiran Thakkar
Rakshit Vallabhaneni (w/
thesis)
Suchismitha Vedala
Pranay Dilip Wankhede
Michael Wilson
Chao Yang

Ph.D.

Arko Barman
Nacer Khalil
Suraj Maharjan
Dinesh Majeti
Carlos Alberto Rincon
Castro
Prasha Shrestha
Mahmut Unan
Shengrong Yin

CONTACT

Friends of Computer Science



Former Friends



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.

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