Welcome to the Department of Computer Science. I am very proud of our department and its contributions to the overall mission of the University. Led by experienced educators, our undergraduate and graduate programs continue to grow and prepare our students for dynamic careers or higher education in the fields of Computer Science and Information Technology.

In spring 2020, we will welcome our MacLean Chair visiting faculty, Father Joseph Puliparambil, who will join us from Marquette University. The Donald I. McLean, S.J. Chair is held by members of the Society of Jesus who are accomplished teachers and scholars in the Arts and Sciences. Fr. Puliparambil will teach Artificial Intelligence and he will be contributing to creation of a new graduate program in Computational Engineering in CA&S.

At the end of fall, two proposals for new interdisciplinary programs were submitted and approved by the University; an undergraduate minor in Data Science (with Math and Physics); and an undergraduate minor in Computational Engineering & Applied Physics (with Physics and Math), which is intended for students who wish to study the development and application of computational models and simulations, coupled with high-performance computing, to solve complex physical problems arising in engineering analysis and design (computational engineering) as well as natural phenomena (computational science).

In addition to teaching, our CS faculty engage in community outreach, perform research, and prepare proposals for various governmental and educational grants. Three faculty from Computer Science, Mathematics, and Physics recently submitted a Major Research Instrumentation (MRI) grant to the National Science Foundation (NSF) to receive funding for a high-power GPU server for performing research in the areas of big data, deep learning, and mathematical organization.

(Continued on Page 2)
Graduate students Ryan Ruan and Yves Chen, under supervision of Dr. Forouraghi, wrote a paper entitled “On Development of Data Science and Machine Learning Applications in Databricks”, which appeared in Lecture Notes in Computer Science.

Undergraduate students continue to participate in the ACM International Collegiate Programming Contest. In November, six of our students, coached by Dr. Wei Chang, participated in ACM’s 2019 Collegiate Programming Contest. We are very grateful to them for representing the University and the department in this prestigious event.

Our partnership with SAP is growing stronger every year. In October, representatives from SAP interviewed students for positions over the summer. In addition, they visited the campus to interview our juniors for summer internships, as well as graduating seniors for full-time employment. The department has also established a relationship with Accolade, Inc., who will actively recruit CS and IT majors for internships and full-time employment. Plans are currently underway to establish an internship/co-op partnership with Unisys.

If you are a former student reading this newsletter, we would love to hear from you. Thanks for visiting!

Welcome Adjunct Professors! Ameen Abdul Hai has returned to teach CSC-115 (Intro to Computer Science), CSC-240/500 (Discrete Structures), CSC-503 (Java Programming). Manchang Feng, recent MS/CS Graduate, has joined the department to teach CSC-261/681 (Principles of Programming Language) and CSC-501/502 (Computer Science I/II). Vincent Kelly, a Technical Solutions Analyst for Cisco, will create three online courses for the 2020 spring semester.

Dr. Wei Chang is the new Chair of the SJU Elections Committee.

New online graduate courses were developed over the summer and offered in the fall semester. Mary Krueger designed CSC-621 (Database Systems). She is also working on an online course for the 2020 spring semester. Ameen Hai developed CSC-503 (Java Programming).

New Adjunct Professor, Mr. Vincent Kelly, is currently developing the following online courses for the 2020 spring semester: CSC-552 (Computer Architecture), CSC-553 (Computing Systems), and CSC-652/653 (Digital Forensics).

Congratulations to Dr. George Grevera on his first grandchild! Finn was born on July 28th and is the son of his daughter, Laura, a graduate of SJU!

Welcome back to student workers Cornelia Bower (CS Major) and Jess Atoo (IT Major)! A warm welcome to the following new student employees, hired to assist with editing online course videos: Caitlyn Dougherty (CS Major) Tori Kestel (CS Major), and Tiffany Levine (CS Major).

The department will welcome MacLean Chair Joseph Puliparambil, S.J. during the 2020 spring semester. Father Puliparambil has a PhD in Electrical & Computer Engineering from Marquette University and will be teaching CSC-362/CSC-680 (Artificial Intelligence).

Dr. Jonathan Hodgson, Professor Emeritus, recently became a United States citizen. Congratulations!
Congratulations to the following majors who made the 2019 Spring Dean’s List:

**Computer Science Majors**: Briana Baier, John Coleman, Abigail Corbett, Nadia Cugini, Elizabeth DiFilippo, Joseph Dougherty, Brittany Hartwell-Miller, Timothy Johnson, Andy Mac, Kara McLaughlin, Nicholas Senatore, Allison Smith, Sara Strickland, Hao Wu.

**Information Technology Majors**: Samuel Andaloro, Alexandra Coyle, Kathryn Kelly, James O’Boyle

Congratulations to McNulty Scholar, Lillie Bennett, a freshman Computer Science Major! The John P. McNulty Scholars Program awards students four-year full and partial tuition scholarships to pursue a degree in one of the natural sciences, mathematics, or computer science. Scholars also receive intensive faculty and peer mentoring and participate in ongoing leadership training and professional development.

In September, Freshman Computer Science major, Hannah Nguyen, won 2nd Place at the “1000 Dreams Hack” All-Girls Hackathon w/Amazon & Twitch at Yale University (see “Special Report” on page 9).

Congratulations to the following students who were awarded Graduate Assistant positions for fall: Abdulrahman Amithyn, Danni Jin, Jiahui (Abby) Wu, and Jiajie (Joe) Zhu.

Over the summer, IT major Samuel Sauter began the initial stages of developing his own e-commerce business.

Over the fall 2019 and spring 2020 semesters, Senior Darrell Berry will be interning as an IT Help Desk Technician for Lincoln Financial, located in Radnor, Pennsylvania.

The following students participated in the ACM National Programming Contest on November 9th, at Washington College in Chestertown, Maryland. Anna-Maria Berezovski, Joseph Dougherty, Evan Pomponio, Thomas Repa, Timothy Johnson, and Sarah Strickland. Many thanks to their mentor, Dr. Wei Chang!
I worked as an Application Development Intern for Securian Financial. Securian is an insurance and investment company based in St. Paul, Minnesota. The company has been operational since 1880 and has approximately 5,000 employees. The company has corporate offices in the U.S. and Canada. I was placed on the Investments Team. My team offered support to internal business users in three departments: Accounting, Actuarial, and Asset Management. My team was mainly waterfall but the company was making a shift towards agile, so I participated in multiple sprints with my team.

I worked on two projects for Securian. My main project was doing front-end internal web application updates. The entire company went through a rebranding, so all sites needed to reflect change. I was tasked with going through all of my teams’ sites and doing these updates. I needed to use HTML, CSS, JavaScript, Bootstrap, and SQL to accomplish this goal. An additional project I worked on was to add a new export feature to an internal web application that was requested by the business users. To complete this task, I used Java and external JARs.

“Do not let what you cannot do interfere with what you can do.”
~ John Wooden
Over the summer, I had the opportunity to begin my internship at SAP through the STAR (Student Training and Rotation) Program. I was placed with the Web Content management Systems (WCMS) team. This team is responsible for ensuring all outwards facing websites, such as SAP.com, are running, as well as keeping those websites updated. They also handle all internal IT web-based tickets.

These websites are visited by millions of people a year and are crucial to SAP’s image as a company. I had the opportunity to first format and reorganize the WCMS internal Wikipedia page. After that, I began a project that works with SAP’s search application. This project uses image detection to search on SAP’s website, finding SAP-based solutions for the searched object. I also worked closely with my fellow STAR interns to organize and execute events for the interns all summer long. It was an amazing experience that has taught me valuable technical and soft-skills.

Aubrey Diehl
Susquehanna International Group
Philadelphia, Pennsylvania

For the fall, 2019, semester, I interned at Susquehanna International Group (SIG), a technology and trading firm located in Philadelphia. At the beginning of the internship, I was assigned a profit and loss reconciliation project. The goal of the project is to create an Excel workbook that exposes differences between internal and external sources of data for profit and loss values. Using SQL, I extracted data from SIG (internal) and Merrill Lynch (external) and then used VBA to ultimately calculate and compile all of the differences into one sheet. By completing this project, I successfully automated a time-consuming daily task, therefore creating a more efficient work environment for my department.

Traditionally, hosting application on-premises was the primary way of delivering software solutions to clients and required a company to maintain the solution and all of its related processes. Today, many companies are making the decision to move on-premise applications to cloud providers. This decision can be a long and complex task. We will explore what goes into making this decision from an architectural standpoint and provide a demo leveraging ASW services, showing how they can be used to ease any company’s transition to the cloud.
SUMMER INTERNS

Marc Cozzarelli (Sophomore/Finance Major, Computer Science Minor) was employed as an Accounting Intern by Shipco Transport, Inc. in Hoboken, New Jersey. Marc performed accounting and clerical functions for the Office of the Controller in the Global Accounting Office. He worked on custom ERP software accounting platform in accounts receivable, foreign accounts, collections, and accounts payable and worked with Assistant Controller who oversees international and domestic accounting.

Joseph Dougherty (Senior/Computer Science Major) was an Information Systems Intern for Delaware Valley Health, Inc. in Philadelphia, Pennsylvania. Joe was part of a small team that maintained the software and hardware of the organization, while implementing new software and upgrading previous software as per the company’s future aspirations and current needs. As an individual, Joe was the Leader for one of the multiple projects under his responsibility. He set up the Mobile Device Management (MDM) software, which had begun in the past but was not seen through. Inheriting a project was a challenge and he was “thrown into the fire” because he did not necessarily receive background. Joe successfully connected the MDM software to the company’s Apple Volume Purchase Program and deployed the first iPad to an employee in the company through the MDM platform.

Jessica Atoo (Junior /IT Major) interned for the Wharton School at the University of Pennsylvania, located in Philadelphia, Pennsylvania. Her responsibilities as IT Helpdesk Support included providing desktop support for faculty, staff, and students. She provided both hardware and software support for a variety of systems and worked on building and imaging computers as well as upgrading old computer systems. Jess performed BIOS updates on these machines and assisted various faculty with their computer needs, which spanned from connecting to Upenn Wifi to installing new machines. She also helped manage the merger between the school’s Finance and Management IT Departments.

Emma Boyd, (Sophomore/Math Major, Computer Science Minor) was an Information Security Intern at The Teacher’s Retirement System (TRS) in Manhattan, New York. Emma’s duties included working on projects regarding the importance for employees to keep their information and devices secure. TRS employees deal with a large amount of personal information; therefore, throughout the summer, Emma created a phishing email competition to test all employees on hacking attempts, wrote articles based on these emails, and helped create and present a PowerPoint presentation and excel sheets.

In addition to the students who gave internship presentations as a course requirement (see pages 3 & 4), many majors had a variety of internships over the summer.
Sarah Strickland (Junior/Computer Science Major) was employed as a Computer Program Intern at Follett LLC, located in Easton, Pennsylvania. Sarah’s duties include updating the internal website, creating new processes in their ERP system (Avante) and altering existing processes.

Tim Johnson (Senior/Computer Science Major) worked as an Information Security Intern at QVC, located in West Chester, Pennsylvania. In this position, he analyzed malware, phishing emails, and network traffic logs. He also helped in a number of forensic cases and assisted in the design of a Cybersecurity Capture The Flag web application.

Tiffany Levine (Junior/Computer Science Major) was a student intern for the Naval Surface Warfare Center of Dahlgren, in Dahlgren, Virginia.

Alexander Monari (Junior/Computer Science Major) interned as a Technical Support Specialist, Level 2 Technician for Sicom Systems in Lansdale, Pennsylvania. Alexander worked with the fingerprints software team for Tim Hortons Canada and Mexico. He performed daily tasks, such as basic and lvl2 troubleshooting, replacements, software fixes, and database management.

James O’Boyle (Senior/IT Major) was an Application Development Intern at UPS in Parsippany, New Jersey. He worked on updating the Import Tracking application build process from ANT to Maven, as well as Porting Applications from Weblogic to Tom-Cat as part of UPS’ defOps migration.

“A ship in port is safe, but that’s not what ships are built for.”
~ Grace Hopper
“1,000 Dreams Hack—All Girls Hackathon w/Amazon & Twitch”
Saturday, 14 September 2019
Yale University, New Haven, CT

By: Hannah Nguyen (‘23)

Hi readers! My name is Hannah Nguyen and I am a freshman (Class of 2023) Computer Science major hear at Saint Joseph’s University. This past weekend, I had the wonderful opportunity to attend the inaugural 1,000 Dreams Fund Hackathon at Yale University, an initiative hosted by the organization, Amazon Games, and Twitch. I was given a travel grant to travel to New Haven, Connecticut.

To preface the exciting event, I will explain a little bit about Twitch. Twitch is a popular live streaming website where video gamers can share their experiences in real-time with fans as they play games, such as Overwatch and League of Legends.

The hackathon project was to develop an extension which will create a stronger connection between the streamers and their audiences. The judging criteria consisted of Originality/Creativity, Complexity and Code Elegance, Simplicity, Market Potential/Growth, and Completion. The extension had to be developed within six hours.

We were placed in teams of two to four women, with a total of 12 teams. My team first brainstormed the key values of Twitch and how our extension could achieve it. We agreed that encompassing the value of community on an online worldwide platform was very important.

As a result, we built an extension which allowed both streamers and viewers to input their country on an interactive world map. The extension also recorded the different languages spoken throughout the chat to highlight the global scale of viewership. We used HTML & CSS, JavaScript, and Google Maps API for the interface on the Twitch Developer Rig. For back-end development, we used Python and Java.

At the conclusion of the event, we privately showcased to a panel of judges consisting of Amazon Games and Twitch developers, who travelled all the way from California. We were so honored to find out that we won 2nd Place!

I feel very grateful for the opportunity and highly recommend CS majors to participate in hackathons. They are a fun, inclusive way to meet new friends and to feel rewarded after creating an exciting project. The 1,000 Dreams Fund is an excellent organization that supports females in technology. Learn more about them at www.1000dreamsfund.org.

“The only source of knowledge is experience.”

~ Albert Einstein
Fifth-Year MS Program

Frequently Asked Questions

When should I begin to think about the program? Applying for this program is a personal decision and a commitment is not required until junior year. Begin considering this option as a freshman or sophomore.

What are the application requirements? Computer Science and Information Technology majors are eligible to apply to the program in their junior year. A minimum cumulative GPA of 3.0 and a CS GPA of 3.3 is required. Students must maintain an overall GPA of 3.0 through completion of the B.S. degree and also maintain a GPA of 3.0 in the graduate program.

What are the Concentration options in the Master’s Program? General, Artificial Intelligence, Cybersecurity, and Web & Database Technologies.

What are the total courses required to complete the program? SJU is a course-based institution. The undergraduate degree requires 40 courses and 10 courses are required to complete the graduate program. In the 5-Year Program, two of the graduate courses are taken in senior year.

Are courses available online? Yes! Several graduate courses are now available online and online course offerings will continue to grow. The M.S. in Cybersecurity is offered totally online.

I’d like to take some time off between completing my Bachelor’s Degree and starting the Master’s Degree. Is this possible? Unfortunately, this is not feasible. Admitted students are expected to transition immediately from the undergraduate program to the graduate program and must complete the M.S. degree requirements within one academic year (fall-spring-summer).

Are Fifth-Year Master’s Students eligible to apply for a Graduate Assistant position? Yes! Graduate Assistants are hired every semester.

What are the opportunities for a person with a graduate degree vs an undergraduate degree? The market for Computer Science positions is vibrant and growing. Graduates will do well with a B.S. degree and are successful. The main difference is starting salary—there is approximately $10,000 difference. Also, promotions are usually preferred with a graduate degree, as opposed to an undergraduate. The decision to obtain a Master’s degree is a personal choice!

What is the advantage of obtaining a Master’s Degree through this program at SJU? Since the Computer Science class size is small, faculty have the ability and the flexibility to work with every student on an individual basis. Typical M.S. programs take two years to complete. There is also a cost savings, as two (3) credit courses are charged on the undergraduate fee scale, as opposed to the graduate fee scale.

Further information can be viewed here, or you may contact the Department Chair/Program Director, Dr. Babak Forouraghi at 610-660-1567 or bforoura@sju.edu.

“Don’t compare yourself with anyone in this world...if you do so, you are insulting yourself.”

~ Bill Gates
FALL 2019 EVENTS

Thursday, August 22
New CS Graduate Student Orientation

Thursday, August 29
Welcome Back Lunch

Thursday, September 12
Mass of the Holy Spirit

Saturday, September 14
“1,000 Dreams Hack” All-Girls Hackathon w/Amazon & Twitch, Yale University

Tuesday, September 17
CS Club General Meeting

Thursday, September 19
Summer Internship Presentations
Fall Career Fair

Thursday, September 26
SIG Presentation

Thursday, October 10
SAP America Co-Op & Internship Presentation
SAP Senior Interviews

Monday/Tuesday, October 14-15
Fall Break

Thursday, October 31
CS/MS Five-Year Program Information Session

Tuesday, November 19
Fall Internship Presentations

Thursday, November 21
Guest Speaker: Everett Stern, CEO of Tactical Rabbit

Wednesday, November 27
Thanksgiving Break Begins

Tuesday, December 10
Reading Day

December 11-17
Finals / Winter Break Begins

EYE ON IT > Bose Audio Sunglasses
Bose recently released sunglasses with built-in, advanced Bose technology. *Wearables by Bose* are basically Bluetooth sunglasses. Although many platforms are still in progress, these sunglasses play music and take calls! Look for compatible apps soon, which are currently in development and will expand the functionality of these cool shades!
Everett Stern, CEO and Intelligence Director of Tactical Rabbit, will discuss his pivotal role in uncovering the HSBC scandal—a fraud and money laundering scheme so vast, it resulted in HSBC Bank being fined $1.9 billion, the largest ever issued by the U.S. Justice Department. Everett and the scandal have been covered in POLITICO, Rolling Stone, Netflix’s “Dirty Money”, American Banker, and more.

Everett Stern is CEO and Intelligence Director of Tactical Rabbit, a private intelligence agency that provides clients with actionable business intelligence. Mr. Stern is a former candidate for the U.S. Senate and made international headlines as a government whistleblower who helped uncover one of the largest banking scandals of all time.

When Stern joined HSBC Bank in 2012, he was assigned to monitor Middle East transactions. Stern soon discovered that the bank was facilitating the transfer of hundreds of millions of dollars by terrorist organizations and major drug dealers, in clear violation of U.S. law. Unfortunately, Stern’s bank superiors continued to ignore his warnings. This forced Stern to share information and provide evidence about the bank’s illegal activity to the Central Intelligence Agency. “After trying in vain to convince his bosses to at least let him do his job and look for money-laundering, Stern decided to turn whistleblower, telling the FBI and other agencies what was going on at the bank”, Rolling Stone would later write. Stern quit HSBC in disgust and filed a whistleblower claim with the Securities and Exchange Commission (SEC).

Ultimately, the U.S. Congress confirmed that the bank had “exposed the U.S. financial system to a wide array of money laundering, drug trafficking, and terrorist financing risks.” In late 2012, in part as a result of Stern’s efforts, HSBC agreed to pay a record $1.9 billion in fines to U.S. authorities. Stern’s passion for fighting threats to the United States did not end with his tenure at HSBC.

In recent years, Stern has run for U.S. Senate in Pennsylvania and founded Tactical Rabbit, carrying out sophisticated private intelligence operations on behalf of clients. He also founded Rabbit Capital Management, a hedge fund, which is dedicated to uncovering fraud and money laundering activity that feeds the financial needs of terrorist organizations and drug cartels. He has been featured in dozens of news articles and broadcasts and appeared in the Netflix Documentary, Dirty Money, on Wall Street and corporate greed.

Stern was born in New York City. He is a graduate of Florida Atlantic University and earned his MBA from Stetson University in 2010.
Manchang Feng (M.S. / 2019) was hired as an Adjunct Professor for SJU’s Computer Science Department for the fall semester.

Ameen Abdul Hai (M.S. / 2018) began his PhD Program in fall at Temple University. Ameen’s field of study is Data Analytics and Biomedical Informatics (Machine Learning).

Rui Liu (M.S. / 2015) is Lead Software Developer at 13 Rattles, Inc., located in New York. Rui’s wife is also an SJU alum, with a degree in Marketing.

Sonia Parikh (M.S. / 2017) is a Senior Software Engineer for Cerner. Her responsibilities include: coding, testing, debugging software solutions, and reviewing codes for teammates. She is also involved in designing new software, automating unit testing, including planning for development, test plan, deployment plan, etc.

Avinash Raghupathy (M.S. / 2002) is Senior Manager/Public Cloud SRE at Comcast in Philadelphia. He leads a team with mixed Public Cloud engineering responsibilities. One-half of the team is focused on operational support and the other is focused on developing tooling and automation that enables other technology teams at Comcast to migrate to or establish themselves on AWS, Azure, and GCP. Avinash helps shape long-term Cloud Strategy and also ensures that their security and governance goals for Cloud adoption are met.

Stephen Wigmore (M.S. / 2015) is a PHP Developer for The Tactile Group, located in Philadelphia. In his role, he interacts with various projects, both on the front-end and back-end. He works with databases, various APIs, and libraries to help build fully functional websites and online systems. Since May, 2017, Stephen has been married to Naomi, his beautiful wife is from South Africa and he loves her very much!

We enjoy updates from Alumni! Please keep in touch. Updates can be emailed to csci@sju.edu or submitted using this link.