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 prepare our students for dynamics careers or higher education in the fields of Computer Science and Information Technology.

Earlier this year, University Council unanimously approved the Department’s proposal for creation of a new graduate concentration in Cyber Security. A national search was conducted soon after, and I am happy to report that Dr. Wei Chang from Temple University was selected as a new CS faculty member in charge of the Cybersecurity concentration. Dr. Chang is an experienced researcher in the fields of Computer Security and Privacy-Aware Mobile Computing as indicated by his numerous scholarly articles published in prestigious journals and conferences. Further, in an attempt to encourage promising undergraduates to pursue their CS graduate studies at the University, the Department has begun a new initiative for creation of an Integrated 5-year/4-year M.S./B.S. Program. We are hopeful the new program will be available to juniors starting in fall 2017.

The Computer Science students and faculty continue to be involved in research. In February of 2016, Dr. George Grevera was the conference chair at the SPIE Medical Imaging International Conference held in San Diego, CA. Last year, Andrew Linton (a former graduate student) performed a year of research in the area of Artificial Intelligence and Evolutionary Programming under the supervision of a faculty member. Their paper will be published in the International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems in August 2016 in Japan. An undergraduate student, Jimson Mathew, performed a yearlong honors research in the area of biometrics and cryptography.

Our undergraduate students continue to participate in ACM’s International Collegiate Programming Contest. Last November, two teams represented the Department in ACM’s 2015 contest which was attended by teams from many universities and colleges in the Northwest Division. Many thanks to Professor Mary Kruger, their mentor and coach, and to our Computer Science Club officers who helped the Department recruit contestants for this event. Also, the induction ceremony for the UPE Computer Science Honor Society was held in April 2016, and we are very proud of the nine new members (4 undergraduate students and 5 graduate students) who were inducted into the society because of their outstanding academic accomplishments.

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Greetings From The Chair (continued)

Many of our students gained work experience over this summer by interning for technical companies in the area while earning credit. Last summer, a number of our undergraduate, as well as graduate, students interned at companies such as: SAP, Lockheed Martin, Harmelin Media, Star Group, Vanguard, Arris Group, etc. Our students all agree that this is a perfect way to complement the education they receive in the classroom and to gain experience developing professionally in a real-world environment.

Thanks for visiting!

* In October, a delegation from China’s Shanghai Normal University visited the campus. Dr. Forouraghi attended this session. He gave a brief overview of the Computer Science undergraduate and graduate programs, distributed informational materials, and presented them with a small token of appreciation from the department.

* In January, University Council approved the new Cybersecurity Concentration for the Graduate Computer Science Program. This concentration replaces Information Sciences.

* BL-209 was reorganized to serve as a Department Conference Room, which will be used for meetings, presentations to prospective students, and student projects. A new CS Library area has also been set-up in the hallway. All are encouraged and welcome to borrow books. Please feel free to stop by, check out our new space, and receive a complimentary bookmark!

* The Department welcomes new tenure-track faculty member Wei Chang, who graduated in May from Temple University with a PhD in Computer Science. His research interests include security, privacy, distributed systems, social networks, clouds, and mobile computing. In Fall, he will teach CSC-201 (Data Structures) and CSC-240 (Discrete Structures I). He is also developing a new Android Mobile Security course, which will be offered in Spring, 2017.

* Congratulations to Dr. Jonathan Hodgson (Professor Emeritus) and his wife, Andrea, on the arrival of a new granddaughter. Emma Hannah will turn one on May 18th! Last year, Jonathan and Andrea spent three weeks in Scotland - hiking and driving along the scenic northern and western coasts.
Luigi Nunez (Chiltern International / King of Prussia, PA)

Professors in the Computer Science Department always say how important it is to learn how to read others’ code and to practice searching online for information and help. Such lessons are reinforced in the work field.

I was an SAS Programming Intern at Chiltern International. In my Internship Presentation, I will discuss which lessons and advice teachers have given in classes came into fruition within my own internship; explain the fast paced nature of the work place; and provide an insight into different tools and software used at Chiltern, including UNIX and CVS (concurrent versions system).

Luke Myers (Franklin Institute Science Museum / Philadelphia, PA)

I interned twice a week in the Information Technology Services Department of the Franklin Institute Science Museum in Center City, Philadelphia. I worked alongside their DBA/SQL Developer cleaning up and documenting all of the stored procedures, queries, and reports used for their Business Intelligence reporting application called Logi Studio. Additionally, I wrote SQL queries and scripts in order to help integrate their Microsoft SQL Servers with their new ticketing system called Galaxy.

I performed theses SQL operations using Microsoft SQL Server Management Studio. I also performed a series of tasks for the ITS Department that involved updating and cleaning up their Active Directory and VoIP phone system using a software package called ADManager Console.

Lastly, I performed a number of rudimentary tasks when needed. These tasks included taking inventory of computer hardware and cables within the department, conducting desktop support for non-ITS employees, performing system imaging backups and recoveries for the ITS servers, and installing and updating application software on the ITS servers and users’ workstations.

This internship gave me hands-on experience in the field of Database Management and IT Services. I attribute my success at the Franklin Institute to both my prior coursework in Database Management Systems, my eagerness to learn new technologies, and my ability to communicate effectively with full-time IT professionals. As a second-semester graduating senior, I highly recommend other students of Computer Science to take on an internship.

“The only way to do great work is to love what you do. If you haven’t found it yet, keep looking. Don’t settle. As with all matters of the heart, you’ll know when you find it.”
~ Steve Jobs
On November 7th, two teams travelled to Washington College in Chestertown, Maryland, to compete in the ACM National Intercollegiate Programming Contest and one team came in 5th! Congratulations to Sarah Cooney, Seth Fields, Karl Morris, Julie Osbourne, Jonathan Rapp, and Brendan Szefinski. Their faculty Mentor, Professor Mary Krueger, said all are looking forward to competing again next year!

During the fall 2015 and spring 2016 semesters, second-year graduate student Saleh Makkawy, volunteered at the Simpson House, which is a retirement community located on Belmont Avenue. He provided the residents with technical support for their personal computers. The feedback was positive and everyone enjoyed Saleh’s visits!

Eleftherios Lazaridis, a second-year graduate student, received an internship position with QVC over the summer.

Brendan Szefinski will be interning this summer at AXA Equitable, a life insurance company located in Secaucus, New Jersey.

Second-year graduate student Sonia Parikh has received a summer internship position as a software developer at Starship Health Technologies, LLC, located in Plymouth Meeting, PA.

Luigi Nunez will continue to work as an intern full-time over the summer at Chilten International in King Of Prussia.

The 2016 Upsilon Pi Epsilon (UPE) 12th Annual Induction Ceremony was held on April 7th in the Presidents’ Lounge, followed by a lunch for family, friends, faculty, and staff.

UPE is an honorary society whose membership consists of outstanding undergraduate and graduate students in the computing disciplines and was first organized at Texas A&M University in 1967. In 1992, UPE received formal endorsement by the board of Governors of the IEEE Computer Society. In 1997, UPE was admitted as a member of the Association of College Honor Societies. Since 2004, the Department of Computer Science has been a member of the UPE Lambda Chapter of Pennsylvania.

Congratulations to the following 2016 inductees:

Graduate Students: Sarah Alqahtani, Shengqi Gong, Elham Jaffar, Sonia Parikh, Diego Sosa.

Undergraduate Students: Shelley Donaldson, Sean Monahan, Karl Morris, Brendan Szefinski.
Andrew Vitek

OBD-2, or On-Board Diagnostics, is an automotive diagnostic technology that is standard and required in all vehicles manufactured within or after 1996. This technology allows mechanics as well as consumers to “talk” with their car’s ECU (Electronic Control Unit) to diagnose any current or impending issues within certain areas of the mechanics or electronics of the vehicle. All cars have a “check engine” light that will illuminate upon a certain error code being sent to the ECU. In most cases, one cannot simply diagnose the issue just by seeing that error light, for there are thousands of possible error codes that could trigger this light. However, the OBD-2 technology allows a user to request and interpret error codes from the ECU to pinpoint the cause of the error.

The purpose of my senior project was, with the guidance of Dr. Grevera, to explore what could be accomplished with this technology using Android studio and a cheap OBD-2 Bluetooth scanner.

Elizabeth Mancini

A microcontroller is a small computer. It contains a processor core, memory and programmable input and output peripherals. The memory is only large enough to store one program. The programmer can use the input and output pins on the microcontroller to either send out or take in information. For my project, I used an Arduino microcontroller. This microcontroller understands the Arduino language, which is based on C. In order for the robot to sense where it is going, I used infrared and ultrasonic sensors to detect the surrounding environment. I used the information the sensors detected to program instructions to the robot on how to act in certain environments.

Jimson John Mathew

An individual possesses unique biological traits that distinguish that person from another. Such inherent traits include one’s fingerprint, iris, and face, among many others. These can be used to secure protected data via encryption, such that only the concerned individual and no one else is able to access the data. Using a message digest, we were able to generate a 256-bit AES key from a fingerprint that can be used to encrypt any file. Using other similarly generated keys, attempts were made in order to access an encrypted file, but the file still remained encrypted and was decrypted only with the actual key.

Luke Myers & Robert Nocella

This semester, we performed a series of cyber security-related simulations and experiments on three virtualized Linux Ubuntu machines - Bob, Jane and Eve. First, we built a front-end web store hosted on Apache web server with a back-end MySQL database, with PHP as the server-side scripting language. We simulated man-in-the-middle, SQL injection and XSS attacks against it. We then encrypted our site with a self-signed certificate and attempted to perform another man-in-the-middle attack against our newly encrypted site. The man-in-the-middle attacks were performed with WireShark. We then simulated TCP session hijacking twice. The first time we utilized a software package called Netwox, and the second time we used our own socket scripts written in python. Lastly, we experimented with penetration testing and port scanning using software programs called W3AF and NMap, as well with another python script that we wrote.
Danping Shen

The first HTML5 version was released in 2008. With recent improvements, HTML5 now has better support for local storage and games are available when JavaScript's graphic elements are included. HTML5 is supported by most modern browsers and people can play html5 games and applications on many different platforms. Also, JavaScript has many good libraries and frameworks. Libraries offer a simple way for developers to reuse tested code, shortening development time. There is reason to believe that HTML5 apps will continue to grow in popularity. The purpose of my project is to explore how to use HTML5 and JavaScript to make a game.

Dear DoDo is inspired by a handheld digital pet called Tamagotchi, which was very popular in 1990s. Players can enjoy taking care of their digital pet. My project is a web-based digital pet. The pet has attributes such as hunger, thirst, and comfort. It will die if some of the attributes reach zero. Players can earn gil by working and use that gil to buy items to take care of their pet. The project will use JSON and HTML5’s new local storage feature to save data. The scene will be drawn on HTML5 <canvas> and the function and animation will be finished with JavaScript and JQUERY.

Matt Black

For the past four months I have been working with Dr. Grevera to create a Game Development course for the Computer Science Department. I have created power-points to introduce the material covered by the course and sample projects for students to delve into and dissect. In hindsight, my original goals for the class may have been too ambitious, especially for one put together over the course of a semester. However, I have successfully covered a range of topics that I think will provide students an interesting and informative introduction to game development.

There are a lot of topics covered in this course and, moving forward, I think it will be a great addition to the Computer Science Department’s elective offerings. The course covers a range of topics, including 2D/3D Art, Environment Design, and, of course, programming games. Specific programming topics include static classes, enumerated data types, and event delegates. This course will require students to build at least five projects and will help them develop a more robust portfolio, whether they choose to pursue a career in Game Development or not.

“The most important property of a program is whether it accomplishes the intention of its user.”

~ C.A.R. Hoare
SPRING 2016 EVENTS

Thursday, February 11
Guest Speaker Elizabeth Schroeder from InternU will discuss internship opportunities, share valuable information, and review resumes.

Thursday, April 7
2016 Upsilon PiEpsilon (UPE) induction ceremony.

Tuesday, April 12
Senior Test

Thursday, April 21
Senior Presentations

Tuesday, April 26
Internship Presentations:

Tuesday, May 3
Reading Day

Saturday, May 14
Commencement

EYE ON IT → Lego Phone (Project Ara)

Developed by Advanced Technology & Projects Group (ATPG). Project Ara allows users to build their own device by attaching modules to it—similar to the concept of legos! Ara devices will run on the Android Operating System. This technology is still in development stage, so keep your eye on it! Further information can be found at: http://www.projectara.com/faq/.

Class of 2016

♦ Brian Companile will continue to work for Nielson-Kellerman Company in the IT Department. He will play a larger role on the Web Development Team.

♦ Shengqi Gong received the graduate program honors award. Sponsored annually by the College of Arts and Sciences, the graduate program awards are designed to recognize one graduate student from each major program for outstanding academic achievement, scholarship, leadership, and contribution to their academic discipline. On May 10, Shengqi was inducted into Alpha Epsilon Lambda. He graduates with a concentration in Web & Database Technologies and his academic performance in his area of specialization has been outstanding. In addition to his exemplary work as a Graduate Assistant, Shengqi has been involved in and committed to various initiatives in the department to raise awareness regarding the importance of computer science education. In Spring 2016, Shengqi was inducted into the SJU Chapter of Upsilon Pi Epsilon (UPE), which is the International Computer Science Honor Society.

♦ Elham Jaffar plans to return to Saudi Arabia to work. She would eventually like to return to the U.S. to pursue a PhD in Computer Science.

♦ Shanshan Jiang will continue her education at SJU by pursuing a degree in Business Intelligence.

♦ Luke Myers received a position as a Java Developer at Vanguard, located in Malvern, PA.

♦ Robert Nocella will be serving in the Air Force upon graduation and plans to pursue a career in cybersecurity.

♦ Ather Sharif has secured a permanent position at Comcast, located in Philadelphia. He also plans to pursue a PhD in the near future.

♦ On June 13th, Andrew Vitek will begin working as an IT Consultant for Revenue Solutions in Providence, Rhode Island.

“Your biggest risk isn’t failing, it’s getting too comfortable.” Drew Houston
Hussain Alhassan (M.S. / 2011) will graduate from University of Bridgeport with a PhD in Computer Science in May. Hussain’s area of research is in brain signals (EEG). Congratulations and we wish Hussain much success in the future!

Stephen Del Fra (B.S. / 2003) has worked for Accenture as a Business Technology Integration Consultant for the past 13 years. His primary focus has been SAP Data Migration and Conversion Strategy and Implementation. It was so nice to hear from Steve!

Angela Pawlowski (B.S. / 1986, M.S. / 1989) recently changed jobs at Lockheed Martin. She is now Director, S&T Lab Engagement at Lockheed Martin Mission Systems & Training in Moorestown, New Jersey. This new position follows a long career (25 years) at the Lockheed Martin Advanced Technology Laboratories. We wish Angela all the best in her new position!

Please continue to keep us posted!
Send your updates to csci@sju.edu.

The Offline Observer
Editor
Terese Fasy (tfasy@sju.edu)
Contributors
Dr. Babak Forouraghi
Madeline Yeakey

Department of Computer Science
Saint Joseph’s University
5600 City Avenue
Barbelin/Lonergan Hall—Room 211
Philadelphia, PA 19131
510.660.1567 (Phone)
610.660.1592 (Fax)
csci@sju.edu
http://cs.sju.edu/

https://www.facebook.com/cs.sju.edu
https://twitter.com/CSatSJU