Rowan University

The Data Mine

Issue 1
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Welcome to the Computer Science Department Newsletter

Welcome to the Computer Science Department Newsletter! This is a new newsletter brought to you from the Computer Science Department to cover all news and events that are happening in the department!

Invited Speaker Series
The Computer Science Department has a seminar series that invites speakers from large corperations and others companies to come speak to students about various topics that will help students understand more about that certain field or topic. The talks run from Feburary to April. The remaining talks are March 22nd with internU which is a career consulting company whose purpose is to help kick start the careers of recent college graduates entering entry-level roles in the industries such as technology, business, marketing, health, sciences and more. We also speakers on March 29th from Health Care Solutions (HCS), April 12th on Secure Real-Time Middleware, and April

19th on Modeling and Sim-ulation. Some of the other companies that come out are ones like Lockeed Martin, AFMS, and others. To come to these talks, Westby Hall Room 111 at 6:30 pm to attend!

New Faculty
We are pleased to announce the arrival of some new faculty for Fall 2016! Dr. Shen-Shyang Ho and Dr. Tony Breitzman are new full-time faculty members in the Computer Science Department. We are also welcoming Professor Nadeem Shazad and Professor Stephen Weissman as new ¾ time. Dr. Ho and Professor Shahzad are teaching Introduction to Object-Oriented Programming while Pro-fessor Weissman is teaching Obj-ect Oriented Programming and Data Abstraction. Dr.Breitzman will be instructing Foundations of Computer Science and some new courses on Data Mining. You can find a more in-depth look at Dr.Ho in a Faculty Spotlight (Page 7).

Summer CUGS Courses
This summer the Computer Science Department offers online courses for a Certificate of Undergraduate Stud-ies in Fundamental Computing. This certificate is open to any major that will enrich and diversify yourself with Fundamental Computing. This online certificate will include the com-pletion of 4 out of the 5 course in the certificate which are;
- Introduction to Programming
- Creating Android Applications,
- Web Literacy
- Introduction to Newtworks and Data Communication
- Principles of Information Security

Registration is open February 20th to May 5th to sign up and allows non-Rowan students. For more informa-tion please go to www.rowan.edu/cs or visit the Computer Science Department in 3rd floor of Robinson Hall, Suite 330.

Thoughts From The Chair

It is my pleasure to welcome you to the Department of Computer Science at Rowan University. In recent years, the department went through a tremendous transformation. We grew from about 250 students primarily majoring in Computer Science to over 800 students pursuing various undergraduate and graduate degrees currently. The majority of our students are pursuing a degree in our ABET-accredited BS in Computer Science. However, in Spring 2016, the department started a new Bachelors of Arts in Computing and Informatics. The program is specifically designed for students interested in the practical aspects of computing. This new BA program has been very popular and currently boasts over 100 students. Our graduate programs also continue to grow, with many students choosing to pursue an accelerated route that allows them to get both BS and MS degrees in Computer Science in five years. I expect that in the near future the department will grow even larger have several very successful undergraduate and graduate programs.

The Computer Science Department also continues to grow its curricular offerings in many cutting-edge computing disciplines including mobile development, cyber security, big data, cloud computing, parallel processing, bioinformatics, virtual reality, computer game design, and others. To this end, in Fall 2016, the department welcomed two new tenure track faculty with expertise in Data Analytics and Machine Learning. Currently, the department is looking to hire additional faculty with expertise in Cyber-Security. We have also initiated several Certificates of Undergraduate Studies programs to enable students from outside our majors to achieve official Rowan credentials in several different computer science domains.

The Computer Science Department also supports a number of very important student-centric initiatives including student mentoring, learning assistants, summer internships, and long-term co-op programs. We continue to expand our curricular and research collaboration efforts with industrial partners that include Lockheed Martin, ASRC Federal Mission Solution, the Federal Aviation Administration, JP Morgan Chase, Bristol Myers Squibb, Perka, and others.

A vast majority of our students have job prospects lined up even before graduation. Many of our students end up working for industry leaders and top government organization such as Amazon.com, Symantec, Lockheed Martin, ASRC Federal Mission Solution, Federal Aviation Administration, US Navy, FBI, Perka, Comcast, SAP, and many others.

We encourage you to come visit us and explore the multitude of exciting opportunities offered by our department.

Sincerely,

    Vasil Hnatyshin
    Chair and Professor
    Department of Computer Science
    Rowan University

Updates from the Clubs

Rowan ACM

The Association for Computing Machinery (ACM) is the largest international student and professional society for scientific and educational computing. The Rowan ACM Chapter, a growing organization built with five committees, has accomplished many tasks throughout this past year. Events included volunteering and participating in Rowan ProfHacks, Local Hack Day, FIRST Lego League, and Tinker Tuesdays (aka Code & Cookies). The Web Development and Mobile Application Development committees have also collaborated to create a Rowan ACM website and mobile application. While the Artificial Intelligence and Animation/Game Design committees have worked together to develop video games with AI algorithms, including a tower of defense game. And, our newest Robotics committee is currently looking to work with AI to build a robot arm project. For more information, visit us at RowanACM.org, email acm@rowan.edu, or download the Rowan ACM Android App from Google Play.

UPE

Upsilon Pi Epsilon is the international honor society for the computing and information disciplines. We strive to provide an environment where some of the top students in the computational community connect with each other. Our members represent undergraduate and graduate students in the top of their class, who are passionate about and dedicated to the computing and information disciplines. We aim to offer members the opportunity to further themselves professionally and academically through our network of current members, alumni and professors. We are currently working on setting up a mentor program with our new members as well as some alumni meet and greets in order to provide our members with meaningful networking opportunities. UPE is not only concerned with the personal growth of our members, but also with the growth of the community. One of our goals is to help spread passion for the computing and information fields through community service events and outreach programs. Some of the events we are working on volunteering at include Code and Tinker, where UPE members will assist in teaching lessons about computers and software to kids at the Glassboro library, as well as the Rowan University Programming Contest, where our members will assist in monitoring and providing technical support to the high school students participating in the contest**.**

ACM-W

ACM-W (Association for Computing & Machinery Committee on Women) is the newly founded club dedicated to getting more women in Computer Science! This year has been dedicated to outreach. ACM-W has created an after school program at the local middle school Ambassador Christian Academy (ACA). Last semester the students of ACA were mentored by ACM-W in the Verizon App Challenge! In this activity, the kids create an original idea for an app and create a video to promote their idea. The new app idea the students came up with was the Chore-O-Matic! This app would connect parents to seeing the progress of their children's chores and be able to give out rewards based on their accomplishments! For the spring semester, ACM-W is having a Robotics Workshop at ACA! The start date is March 10th, 2017. The workshop will be 6 weeks long, accompanied by employees of ASRC. Students at ACA will be able to learn how to program a Lego Mindstorm EV3 robot and perform different tasks with the robots! ASRC will teach the students the fundamentals and ACM-W members will be mentoring the students throughout the workshop. The students are very excited to start, as is ACM-W! We hope to continue working with ACA in the future and connecting more students to STEM!

Rowan ACM-W Chartered & Awarded NCWIT Grant

Rowan ACM-W is a newly chartered student chapter under the international parent organization of the Association for Computing Machinery (ACM). Its mission is to support, celebrate, and advocate for women in advancing computing as a science and profession. Since last spring with the idea to bring this organization to Rowan University, this group of dedicated students have worked diligently with Computer Science Professor Dr. Jennifer Kay and Professor Chia Chien in chartering the Rowan student chapter of ACM-W as well as petitioning the Rowan Student Government Association (SGA) for a charter.

Dr. Jennifer Kay also encouraged the students to apply to The National Center for Women & Information Technology (NCWIT) for a Student Seed Start-up Fund aimed at helping students launch their ACM-W chapters on campus. With the Rowan ACM-W chapter award of $3,000 this past spring from NCWIT, the highly motivated members have been enthusiastically engaged in numerous projects directed at increasing recruitment and retention of women and underrepresented groups, promoting computer science to area youth with educational programs, and supporting their peers to increase confidence and enjoyment in their technical field.

With the full support of Dr. Kay, Professor Chien, and the entire Computer Science Department, the grant has enabled Rowan ACM-W to initiate various projects such as outreaching to local schools with robotics workshops, attending diversity oriented conferences and hack-a-thons, and committing to service with peer mentoring programs. NCWIT also has other grants such as the $5000 Amplification Award and the $15,000 Trailblazer Award that might be in the future for this outstanding organization as they continue to promote their mission and expand their impact on the community along with the entire field of computing.

Debby's Corner

One of the questions I am continually asked by potential students, parents and even current Rowan Computer Science majors is "How do I get an internship?" My response is always "Are you signed up for CS Jobs?" Or in the case of incoming potential students and their parents, "We have this amazing thing called CS Jobs List Serve!" Just about weekly, we have at least one company reach out to our department looking for CS students and graduates for everything from a one-time project to part-time and full-time positions in companies that often lead to fabulous careers. Most of our internship positions are paid. And if the position meets the criteria, your work may also qualify for credit. I encourage every freshman to sign up. You never know what opportunities are available unless you are registered. It's free and easy. Even if you think you are not ready for an internship or part time position, just keeping an eye on the opportunities available is wise. For students to sign up for CSJobsListServe: go to this link:

http://www.rowan.edu/colleges/csm/departments/computerscience/students/intern_jobs/index.php

Here is one blurb from a Recent CS Master Degree graduate:

"As a former MSCS graduate I just want to express how important it is for students to sign up for the CSjobs mailing list. It started me with Rowan IT, which transitioned to an adjunct position, followed by a position for Rowan Global. I plan on staying at Rowan Global and adjuncting now for my career thanks to the mailing list. It was very seamless and they know to expect students without prior work experience."

2017 Senior Awards

Dean's Outstanding Senior Award: **Nick Weintraut**

Nicholas Weintraut is a commendable student ambassador for Computer Science who advances the discipline to classmates, peers, and the community. Nick is in the 4 + 1 program and has continually maintained a high standard of academic excellence. He helped pilot the Learning Assistants Program as our first LA and was instrumental in its success. Nick is also a highly effective departmental tutor. He was awarded a prestigious Research Experience for Undergraduates opportunity at Harvey Mudd College working on recurrent neural networks to learn musical features of jazz solos. He has also actively served as the Association for Computing Machinery's President and Upsilon Pi Epsilon Honor Society's Vice-President.

The Medallion Award: **David Carlin**

David Carlin came to Rowan from RCGC and attacked his course work with an exceptional work ethic. Often taking over 17 credits per semester, David pushes himself to heights that most other students do not attempt. He was installed as one of the founding executive board officers of CS Honor Society, UPE. David works in IRT as part of the Educational Technology team. Not one to be bound by the clock, David lends an off-duty hand to Computer Science classrooms as needs arise. He is working on the same senior project as Cole Robertson. A project that takes entrepreneurship to the next level and is not an official IDEA Challenge program for Rowan. David has a limitless thirst for knowledge and he will ask thoughtful and probing questions in whatever class he attends. David is in the 4+1 program and has an impressive 3.975 grade point average. David earns an A in every class, except the one time he slacked off and got an A-.

CS Chair's Outstanding Senior Award: **Cole Robertson**

Cole Robertson came to Rowan from RCGC and immediately began making an impression in Rowan CS. In his first summer with us, he stood out as a leader in his Computer Science class. Cole approached the Computer Science faculty to see what extended role he could play. Soon after, Cole became a Learning Assistant and Tutor for the department and received rave reviews for both. He has an exemplary GPA of 3.9, has made the Dean's list every semester, has served as a Research Assistant on Dr. Lobo and Dr. Baliga's NSF grant. He has conducted research on image classification using neural networks and in his Software Engineering class, he is working to develop virtual reality data manipulation solutions for Missions Solutions Engineering. He is also enrolled in the 4+1 program for Computer Science. His senior project was a website that generates class schedules from user available times and course ids. Additionally, he works as a lab monitor for Rowan's IRT department and is a member of the ACM.

Nick Bruno Represents Rowan at Cyber-Security Boot Camp

"Determination, drive, and will power" are the keys to success in the field of computer science as told by Rowan's own Nicholas Bruno. Bruno, a member of the 2015 graduating class, is a computer science major who attended a cyber security "Boot Camp" at Delaware State University this past summer. The boot camp consisted of a four-day crash course on the ins and outs of cyber security. At the end of the four days, there was a large competition the program called "Capture the Flag". Imagine hundreds of some of the most intelligent people, ranging in age from seventeen to sixty, hacking their way to the finish line. It was a brutal four-hour competition consisting of random teams of four. Bruno was able to come together with his team, which included a high school student and two graduate students, to ultimately earn the most points and win the competition.

The prize included; a $1,000 scholarship, an exam waiver towards a SSCP certification, and an invitation to Washington D.C. to attend a conference about cyber security in America. Taking place in the Eisenhower Building, multiple aspects of Cyber Security were discussed at this conference. It included topics such as the future of cyber security in America, and finding new ways to attract the right people for the jobs. Also, Alex Levinson, an Information Security specialist at Uber, spoke about his job and cyber security in general. Upon being asked his thoughts on technology education at a K-12 level, Bruno felt more hands-on tech classes should be offered to younger students. He stated he had always enjoyed his science classes, and even took some software and computer classes in high school. Even though he had a passion for computers, he was also attracted to the civil engineering program at Rowan. He entered freshman year as a civil engineer and did enjoy it; however, it wasn't exactly what he was looking for. Coming from a generation that has seen the most change in computer science, he was attracted to the implementation of new technologies. "In first grade, I had a floppy disc. in fifth grade, I had a flash drive. Now in college, it's all in the cloud." Bruno said. It was innovation like this, along with some inspiration from his Computer Scientists Step-father, that ultimately delivered him to the conclusion that Computer Science was for him.
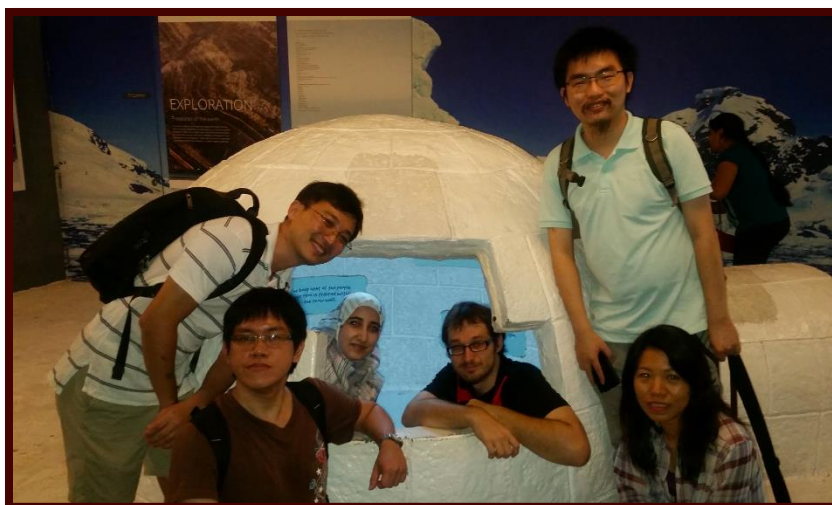
> "In first grade, I had a floppy disc. in fifth grade, a flash drive. Now in college, it's all in the cloud."
> - Nick Bruno on changing technology

Faculty Spotlight Dr.Ho

Dr. Ho is a new professor previously from Nanyang Technological University in Singapore being a professor, researcher, overseeing industrial projects, and dealing with the schools outreach programs. He began his long rich educational career at National University of Singapore getting his Bachelor (Honors) in Mathematics and Computational Science in 1999. There, he proceeded to travel to America where he attended George Mason University (2000 – 2007) and received his Ph.D. in Computer Science. From there, he went to the California Institute of Technology for a post-doctoral program Dr. Ho had received addmision to by submitting a research proposal and teaching a number of courses at Cal Tech. This was a NASA program to where he then became part of the jet propulsion lab (August 2007- May 2010). He then moved to Maryland to become involved with a NASA project as an Independent PI. It was 100% research and consisted of moving object databases to support hurricane research and the analysis of hurricanes, connecting the system to the NASA data center consisting of satellite data which could then automate calculating the hurricane trajectories eliminating human error. Dr. Ho had continued with his personal research, as well, which consisted of having past news predict the future, events such as good or bad, traffic jams, involving space time and data (May 2010 – January 2012). After spending some years in Maryland, Dr. Ho had returned to Singapore to teach at Nanyang Technological where he continued his personal research, conducting projects with BMW/ Rolls Royce (meeting every week), and lecturing 200 plus students in his classes while conducting intensive research (January 2012- July 2016). This is where he and his family wanted to move back to the east coast where he finds himself at Rowan University as an Assistant Professor in the Department of Computer Science with joint appointment in the Department of Electrical and Computer Engineering (September 2016). For Dr. Ho, he prefers the small class teaching to better help the students and feels more personalized here at Rowan University. He also has more time to focus on his research as well as more time for his family.

For Dr. Ho, his biggest accomplishment is living his own American dream of coming from Singapore with two bags and recieving his Ph.D. , having his family, a wife and two kids; a five year old daughter and a ten year old son. Meeting his wife at George-Mason University, Dr. Ho lives in Philadelphia, where his wife works as a data scientist for Comcast. In five years, he wishes to still be at Rowan University and be more involved with a more established research program with his colleagues. We are happy to have Dr. Shen-Shyang Ho in our department! We welcome you to Rowan University!

(Dr. Ho with his research group)

> "I get a lot of satisfaction teaching, especially here because I get to know them… I really know the people, the students."
> -   Dr. Ho