

CCSE OCTOBER 2015 NEWSLETTER

This newsletter is compiled as a reflection of the individuals reporting their accomplishments and activities during the quarter.

CCSE Faculty Work/Accomplishments:

Computer Science (CS) Department

CS – Victor Clincy

- This journal paper was published in [July 2015](#):
Hossain Shahriar, Tulin Klintic, Victor Clincy, "Mobile Phishing Attacks and Mitigation Techniques," Journal of Information Security, Vol.6 No.3, pp. 206-212, [July 2015](#), Scientific Research, doi: 10.4236/jis.2015.63021.

CS – Jose M. Garrido

Student Projects:

- Sage Gerard, BSCS Honors Student






A semantic Software-Engineering tool for Compass projects

Abstract ProCSS is a command-line application that facilitates software engineering when styling web pages. ProCSS uses Sass, a preprocessor for Cascading Style Sheets (CSS), and Compass, a component library for Sass, to separate development and production concerns. In this text we review existing literature regarding web styling and related practices. In the review we show how various tools interact without providing a detailed introduction for any technology other than ProCSS. The review establishes context for us to elaborate on the problem ProCSS solves, define the software specification, document the implementation, and finally guide the reader through installation and usage details.

Literature Review Today users of the World Wide Web request services according to a set of standard protocols, or rules by which computers communicate. To understand what ProCSS contributes to web development we must review historical problems in web development and the tools developers invent to address them. As demands on software grow we face new contexts, and therefore new problems. ProCSS solves the problems discovered by the end of this section, and by then we will understand the context behind the project.

- Nicholas Powers

Simulation Models for Computer Networks and Subnetworks

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

The proposed models will allow the model to simulate a network consisting of subnetworks. Internetwork communication will take place between nodes within the subnetworks similar to the behavior found in the internet. This internetwork traffic will be routed by nodes positioned between subnetworks. The exact structure of the network will be provided by the user. The internetwork traffic will consist of a simplified version of TCP which will be necessary because the extensions will also include packet dropping along connections between nodes.

■ Joseph Brown

CS7992 Directed Study, M.S.C.S

Title: Research on Specification and Simulation of Multi-Processor Systems to Support HPC

Summary: This directed study involves research applied to several aspects of Multi-Processor Systems. This area of computing deals with emerging trends in the use of large scale computing platforms ranging from desktop multicore processors, tightly coupled SMPs, message passing platforms, and state-of-the-art virtualized cloud computing environments. The directed study course includes:

- Revising and reevaluating the general application of Multi-processor systems for HPC.
- Formal specification of Multi-Processor Systems (OCL, CSP, TCOZ, etc)
- Modeling and Simulation of Multi-Processor Systems
- Evaluating different problems and specifically a case study.






This is a research course on parallel computing, meant for graduate students in Computer Science. This course will provide knowledge and research methods on practical aspects of parallel computing. It will be particularly useful for those who plan to perform research on parallel computing.

■ Definition of a Method for the Formulation of Problems to be Solved with High Performance Computing. A Thesis Proposal Submitted by Ramya Peruri, MSCS Student.

Abstract: Computational power made available by current technology has been continuously increasing, but today's problems are larger and more complex and demand more computational power. Interest in computational problems has been increasing as a research area in computer science. These complex problems are solved with computational models that use an underlying mathematical model and are solved using computational resources, simulation, and implemented with High Performance Computing. For such computations, parallel computing has been employed to achieve high performance. This work will identify family of problems that can best be solved using various techniques in parallel computing such as message passing and shared memory.

CS - Hisham Haddad

Publications:

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

- Hossain Shahriar, Hisham M. Haddad, Vamshee Krishna Devendran. *Request and Response Analysis Framework for Mitigating Clickjacking Attacks*. International Journal of Secure Software Engineering (IJSSE), IGI Global, Vol. 6, Issue 3. pp. 1-25, [September 2015](#).
- Harneet Kaur, Hisham M. Haddad, and Jing (Selena) He. *Distributed Agile Development: A Survey Of Challenges And Solutions*. Proceedings of the 2015 International Conference on Software Engineering Research and Practice (SERP 2015), [July 2015, Las Vegas, NV](#), pp. 42-48.
- Pranahita Bulusu, Hossain Shahriar, Hisham M. Haddad. *Classification of Lightweight Directory Access Protocol Query Injection Attacks and Mitigation Techniques*. Proceedings of 2015 IEEE International Conference on Collaboration Technologies and Systems (CTS 2015), [June 2015, Atlanta, GA](#), pp. 337-344.






CS – Selena (Jing) He

Active Research Grants:

- PI, Interdisciplinary Research Opportunity Program (IDROP) grant funding award, College of Science and Mathematics, Kennesaw State University, August, 2013 – August, 2016.
Project description: An ever-increasing amount of work across the natural and social sciences involves attempts to understand complex networks of interacting agents (e.g., ecological, intra-cellular, social, business, telecommunication, and gene networks). Graph theory has provided a rigorous mathematical framework for analyzing such networks, and facilitated cross-talk between disciplines which has allowed insights from one system to advance the study of another. It is increasingly apparent, however, that conventional graph theory alone is ill-suited to study many of the important questions in each of these fields. Pervasive feedback and inter-dependencies inherent in complex adaptive systems require frameworks better able to capture interactive effects of multiple entities on one another and on the wider network. The proposed work expands each PI's research program to incorporate powerful tools for modeling complex adaptive networks (e.g., hyper-graphs) whose application to most fields thus far has been extremely limited. Working together to adapt these tools will allow each PI to ask compelling new questions in their study systems, and highlight new dimensions of interdisciplinary relevance for each PI's research.

Publications:

- Shouling Ji, Zhipeng Cai, Jing (Selena) He, and Raheem Beyah, *Whitespace Analysis and Virtual Backbone Construction in Cognitive Radio Networks: A Social Networking Perspective*, IEEE SECON 2015, Seattle, WA, [June 22-25, 2015](#).
- Amir Atabekov, Marcel Starosielsky, Dan Chia-Tien Lo, and Jing (Selena) He, *Internet of Things-based Temperature Tracking System*, IEEE COMPSAC 2015, Taichung, Taiwan, [July 1 -5, 2015](#).
- Jing (Selena) He, Amir Atabekov, Edward Mwangi, and Donald Toler, *Smart Chair: An Internet of Things Case Study for a Capstone Research Project*, The 2015 International Conference on Frontiers

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

in Education: Computer Science and Computer Engineering (FECS'15), July 27-30, Las Vegas, NV, 2015.

- Harneet Kaur, Hisham M. Haddad, and Jing (Selena) He, Distributed Agile Development: A Survey Of Challenges And Solutions, The 2015 International Conference on Software Engineering Research and Practice (SERP'15), July 27-30, Las Vegas, NV, 2015.

Graduate Student Projects:

Internet-of-Things based Smart Classroom Environment

- Graduate student: Amir Atabekov (System Design/Developer)

Project description: The management of classrooms, halls, offices, and public spaces and the efficient use of these resources in any organization are challenging problems. With the rise of Internet of Things (IoT), the management of these resources can be automated. The smart classroom system will be based on a network of connected sensors embedded on the physical chairs to automatically collect information. All collected real-time data are stored in cloud, which can be visually displayed on a mobile app. Through analyzing the big sensing data, the manager can make intelligent decision.

Privacy Preserving Multi-keyword Search over Encrypted Big Cloud Data






- Graduate students: Sayali Joshi (System Developer)

Project description: Cloud computing has a paramount role in today's computing needs at the same time security has been considered a major issues to provide quality service. Encrypting data before outsourcing data has become a challenge to be able to search using traditional search algorithms. Many techniques have been proposed to cater the needs. However they lack performance, as cloud service is based on pay-as-you-go, hence it is very important to propose efficient scheme to search over encrypted cloud data, as well as preserving privacy for data users. In this project, we propose to apply approximate searching by adopting stemming algorithm to improve the search efficiency. Moreover, to preserve user privacy, dummy fields are inserted into the random positions of the query, so that it can withstand scale analysis attacks.]

CS- Chih-Cheng Hung

MS Thesis Students:

- Major Advisor, MS Thesis – “High-Dimensional Reduction in Hyperspectral Images for Spectral Classification,” by Yugender P. Subramanian, College of Computing and Software Engineering, KSU (in progress).
- Major Advisor, MS Thesis – “Machine Vision Systems for Disease Detection on Retenal Images ,” by Pablo Ordonez, College of Computing and Software Engineering, KSU (in progress).
- Major Advisor, MS Thesis – “Estimating Parameters in Markov Random Field Models for Image Segmentation,” by Vehbi Dragaj, College of Computing and Software Engineering, KSU (in progress).

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

- Major Advisor, MS Thesis – “Fuzzy Classification on High-Dimensionality Image Data,” by Amer Halihodzic, School of Computing and Software Engineering, KSU (in progress).
- Major Advisor, MS Thesis – “Learning Parameters for Hidden Markov Models Using the Bee Algorithm for Image Segmentation,” by Max Fuqua, College of Computing and Software Engineering, KSU (in progress).
- Major Advisor, MS Thesis – “An Image Noisy Removal Algorithm,” by Eric Chang, College of Computing and Software Engineering, KSU, May, 2015.
- Major Advisor, MS Thesis – “A Comparison on Hidden Markov Model and Markov Random Field Models for Image Segmentation,” by Vinh Nguyen, College of Computing and Software Engineering, KSU, May, 2015.

Publications:

- Zhao, S., R. Jin, X. Xu, E. Song, and C.-C. Hung, “A Variational Bayesian Super-Resolution Approach Using Adaptive Edge-Preserving Prior,” **Mathematical Problems in Engineering**, September, 2015.
- Zhang, X., Q. Wang, J. Zhou, and C. C. Hung, “Credibilistic Clustering: The Model and Algorithms,” **International Journal of Uncertainty, Fuzziness, and Knowledge-Based Systems**, vol. 23, No. 4, August 2015.
- Song, E., X. Li, P. Ning, L. Jin, Y. Lan and C.-C. Hung, “A Modified Local Binary Patterns for Image Texture Classification,” **2015 International Conference on Reliable And Convergent Systems (RACS 2015)**, Prague, Czech Republic, October 9 – 12, 2015, pp. 210-215.

CS - Rashaad Jones






Publications:

- Jones, R. E. T. (2015). Artificial Intelligence And Human Teams: Examining The Role Of Fuzzy Cognitive Maps To Support Team Decision-Making In A Crisis-Management Simulation. *In the Proceedings of the Human Factors and Ergonomics Society, 59th Annual Meeting*. Los Angeles, CA: Human Factors and Ergonomics Society.

3. Any interesting projects you are doing with undergrad and grad students:

- Active research includes the development of the Conflict Analysis Policy Response Evaluation Simulator (CAPRE-SIM). It is a web-based information visualization tools that simulates the effects of policy responses to socioeconomic vulnerabilities. CAPRE-SIM is designed to help policy makers and country leaders understand conflict management and how economic policies can mitigate socioeconomic threats. (I am working with Katelyn Marsala, who is a CS major in her junior year).

CS – Edward Jung

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

- Jung, E. and Choi, S., Identification of IP control units by state encoding. In IEEE Comp. Society Ann. Symp. Ib VLSI, July 2015, 216-220. DOI 10.1109/ISVLSI.2015.43

CS – Dan Lo

Current grant:






- Collaborative Research: Enhancing Curriculum and Faculty development on Information Assurance and Security through Real World Relevant Portable Laboratory
Period: [9/1/2014](#) - [8/31/2017](#)
Funding source: NSF

Southern Polytechnic State University (SPSU), and Tennessee State University (TSU) are jointly developing a new information assurance and security (IAS) teaching methodology and expand the capacity in IAS education. Curricular materials based on a portable lab will be developed and integrated in teaching Computer Science (CS) or Information Technology (IT) courses at the partnered universities, and disseminated via summer student and faculty development workshops, webinars, and pre-conference workshops. We plan to publish a lab manual that includes educational materials for studying the recent mobile application development skills and security issues with hands-on experience. One of the foci of this project is to infuse the IAS education in CS/IT programs without adding new courses for fostering the next generation of cyber security experts. SPSU is recognized by the National Security Agency (NSA) as Centers of Academic Excellence in Information Assurance Education (CAE/IAE). TSU is classified as a historically black university(HBCU) with its high ranking for the number of degrees (including doctoral) awarded to African Americans. SPSU has 31% minority students (African American and Hispanic), and a member of National Center for Women and Information Technology. The project has the following characteristics:

1. Promotes and enhances IAS education for underrepresented groups
2. Attracts and prepares a faculty body for offering IAS curriculum via workshops and webinars
3. Promotes learning on IAS hands-on labs anytime anywhere
4. Expands IAS education capacity and produces highly qualified personals for IAS workforce.

Publications:

- Teng Zhao, Dan Chia-Tien Lo, and Kai Qian, "A Neural-Network Based DDoS Detection System Using Hadoop And HBase," in the proceeding of the IEEE International Symposium on Big Data Security on Cloud, [Aug. 24-26](#), 2015, New York, USA, pp. 1326-1331.
- Tianda Yang, Yu Yang, Kai Qian, Dan Chia-Tien Lo, Ying Qian, and Lixin Tao, "Automated Detection and Analysis for Android Ransomware," in the proceeding of the IEEE International Symposium on Big Data Security on Cloud, [Aug. 24-26](#), 2015, New York, USA, pp. 1338-1343.

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

- Dan Chia-Tien Lo, Kai Qian, Wei Chen, Tamara Rogers, Kuo-Sheng Ma, “Learning Hands-on Information Assurance and Security on Mobile Devices,” in the proceeding of the IEEE COMPSAC 2015, [July 1-5](#), Taichung, Taiwan.
- Dan Chia-Tien Lo, Kai Qian, Wei Chen, Tamara Rogers, “A Low Cost, Portable Platform for Information Assurance and Security Education,” in the proceeding of the 15th IEEE International Conference on Advanced Learning Technologies - ICALT2015, [July 6-9](#), 2015, Hualien, Taiwan.

Current Working Projects:

- Big Data Security Analysis (One graduate student, Carlos) His role is research assistant. He is downloading virus data sets, comparing several approaches, and studying new methods.
- Portable Lab in CS education (One graduate student, Shruthi, and two undergraduate students: Donna and James) They are undergraduate research assistants. They develop and test security learning modules. They make labware available via the project website including documents and video tutorials.
- Information hiding in video streams (one undergraduate student, Christopher) He is a former PLSAMP summer research student and continues working with me in a undergraduate research course. He is extending his summer research paper and will submit it to the student research competition at ACM SIGCSE 2016.

CS – Kai Qian






Current NSF awards:

- NSF SFS grant award #1241651 (11/2012-10/2016) Co-PI: Collaborative Project: Capacity Building in Mobile Security Through Curriculum and Faculty Development
- NSF TUES #1244697 Co-PI: Collaborative Research: Real World Relevant Security Labware for Mobile Threat Analysis and Protection Experience (09/2013 - 08/2016)
- NSF SFS #1438858 Co-PI: Collaborative Research: Enhancing Curriculum and Faculty development on Information Assurance and Security through Real World Relevant Portable Laboratory, (09/01/2014 - 08/31/2017)

Pending proposals:

NSF #1544223 KSURSF Research Initiation: Integrating Formal and Informal Engineering Learning

ACM/IEEE conference publications:

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

- Teng Zhao, Dan Chia-Tien Lo, and Kai Qian, "A Neural-Network Based DDoS Detection System Using Hadoop And HBase," in the proceeding of the IEEE International Symposium on Big Data Security on Cloud, 08/2015
- Dan Chia-Tien Lo, Kai Qian, Wei Chen, Tamara Rogers, Kuo-Sheng Ma, "Learning Hands-on Information Assurance and Security on Mobile Devices", IEEE COMPSAC 2015, 07/2015
- Dan Chia-Tien Lo, Kai Qian, Wei Chen, Tamara Rogers, " A Low Cost, Portable Platform for Information Assurance and Security Education", The 15th IEEE International Conference on Advanced Learning Technologies – IEEE ICALT2015, 07/2015,
- Wanqing You, Kai Qian, Minzhe Guo, Prabir Bhattacharya, "A Hybrid Approach for Mobile Security Threat Analysis", 8th ACM Conference on Security and Privacy in Wireless and Mobile Networks(ACM WiSec 2015), 06/2015

Current graduate student research projects:

- Tianda Yang: Integrating association rule mining with Naïve Bayes for big data analysis on bank credit approval
- Priya Anun: Enhanced Naïve classifier for medicine big data analysis

CS – Ying Xie






Active research grants:

- PI: Ying Xie; Co-PI: Ken Hoganson, HPCC (High Performance Computer Cluster) Research, Funded by LexisNexis, funding period 2014-2015, funding amount: \$80,000
- PI: Ken Hoganson, Co-PI: Ying Xie, HPCC Certificate Program, Funded by LexisNexis, funding period 2014-2017, funding amount: \$65,000

Student Projects:

- Project: Study of HPCC from Machine Learning Perspectives. Working with a graduate student Pooja Chenna. This project contains two parts: 1) building a deep learning engine for the big data computing platform HPCC; 2) Comparative studies of HPCC and Hadoop. One of the interesting fundings of this project is that we can transform data from its original dimensional space to multiple higher or lower dimensional spaces, which allows us not only to visualize high dimensional data in a 3-dimensional space, but also to choose the best dimensional space to build the machine learning model
- Project: Stock Price Movement Forecasting Using Deep Learning. Working with a graduate student Jinhee Yang. In this project, we are using deep learning techniques to analyze huge amount of heterogeneous data on stock prices, volatility, and sentiments, in order to forecast future movement of stock prices. A Ph.D. student, Edwin Baidoo, in the Ph.D. in Analytics and Data Science Program has expressed his interests in this project and may choose this research direction as his dissertation topic under my supervision.

Other interesting items:

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

This semester I am teaching the following two courses that are open to Ph.D. students from the Ph.D. in Analytics and Data Science Program
 CS7990: Big Data Analytics with five Ph.D. students enrolled
 STAT7900: Special Topics on Machine Learning, co-teach with Dr. Jennifer Priestley

Information Technology (IT) Department

IT – Bob Brown

"The members of Girl Scout Troop 14376 earned their computer badges working with CCSE faculty on [October 16](#)."

IT – Lei Li






- Research grant. Affordable Learning Georgia Textbook Transformation Grant. Amount: \$30,000. Source: State of Georgia. Period 01/2015 – 05/2016. I'm the PI. Co-PIs: Becky Rutherford, Svetlana Peltsverger, Jack Zheng, Zhigang Li, and Nancy Colyar (Librarian). In this grant, we take a department-wide effort to transform all learning materials used in four database related courses. All selected courses will adopt no-cost-to-students learning material that offers equivalent or better educational effectiveness

Publications:

- Li, L., Zheng, J., Shen Yide, Guo, R. (2015), Which Collaboration Technologies Best Support Student Teamwork? An Empirical Investigation, 2015 Americas Conference on Information Systems (AMCIS), Puerto Rico, August 13-15, 2015. This is annual conference for field of information system.
- Project with students. I currently have two undergraduate students working with me for a research project. The project is to classify source code using neural network method. The project started spring 2015. One student is doing with me to fulfill his scholarship requirement. Another student was working with me by enrolling a special topic course during summer. We are working on submitting a paper to a conference now.

IT – Svetlana Peltsverger

- Affordable Learning Textbook Transformation Grant Co-PI \$30,000, [January 2015](#) - [May 2016](#)
 The USG grant focuses on reducing the costs of textbooks for all Database courses offered by IT department.
- Peltsverger, S., Zheng G. "Enhancing Privacy Education with a Technical Emphasis in IT Curriculum" to appear in Journal of Information Technology Education: Innovations in Practice (JITE:IIP)

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---






"Designing an Information Technology Curriculum Framework to Prepare Successful Graduates in 2025" to appear in Proceedings of ITiCSE 2015.

IT – Hossain Shahriar

- Hossain Shahriar, Hisham M. Haddad, Vamshee Krishna Devendran, "Request and Response Analysis Framework for Mitigating Clickjacking Attacks," International Journal of Secure Software Engineering (IJSSE), IGI Global, Vol. 6, Issue 3. pp. 1-25, [September 2015](#).
- Hossain Shahriar, Stelvio Cimato, Jingyu Zhou, and Katsuyoshi Iida, Fast Abstract Editorial, 2015 IEEE 39th Annual International Computers, Software & Applications Conference (COMPSAC), Taichung, Taiwan, [July 1-4, 2015](#). IEEE Computer Society 2012, pp. 635, DOI 10.1109/COMPSAC.2015.301.
- Hossain Shahriar, Tulin Klintic, Victor Clincy, "Mobile Phishing Attacks and Mitigation Techniques," Journal of Information Security, Vol.6 No.3, pp. 206-212, [July 2015](#), Scientific Research, doi: 10.4236/jis.2015.63021.
- David Lebron and Hossain Shahriar, "Comparing MOOC-Based Platforms: Reflection on Pedagogical Support, Framework and Learning Analytics," Proc. of 2015 International Conference on Collaboration Technologies and Systems (CTS), Atlanta, USA, [June 2015](#), IEEE CS Press, pp. 167-174, ISBN: 978-1-4673-7648-8/15 5.
- Pranahita Bulusu, Hossain Shahriar, H. Haddad, "Classification of Lightweight Directory Access Protocol Query Injection Attacks and Mitigation Techniques," Proc. of 2015 International Conference on Collaboration Technologies and Systems (CTS), Atlanta, USA, [June 2015](#), IEEE CS Press, pp. 337-344, ISBN: 978-1-4673-7648-8/15

List of ongoing projects:

- Thesis Supervision: MSCS student Mrs. Pranahita Bulusu is working on the thesis topic "Mitigation of LDAP Query Injection Attacks", where she is developing fault injection based testing to generate test cases that are capable of revealing LDAP query injection vulnerabilities in web applications. The thesis is jointly supervised by Dr. Hossain Shahriar (IT) and Dr. Hisham Haddad (CS). Pranahita Bulusu has published one conference paper in IEEE CTS 2015 conference and presented held in Atlanta during June 2015 based on her research on LDAP query injection attack types.
- MOOC Security (GRA/GA): MOOC is a popular learning platform but it suffers from security and privacy concerns and few research have addressed it. This project explores some well known (e.g., web and cloud security) issues as well as how MOOC platform becomes a challenge to comply with federal privacy laws such as FERPA. A paper has been submitted recently to an IEEE conference on the finding. Two graduate students are working, David Lebron (MSCS, graduated in Summer 2015) and Rubana Lupu (MSIT, started in Fall 2015). A paper has been published in IEEE CTS 2015 conference where David presented the generic software architecture of MOOC applications, compared the

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

capabilities and learning analytics support among three popular platforms Courseara, EdX and Udacity. He also suggested some new analytics supports for improved student learning.

- SQL Injection in NoSQL Application (GRA/GA): Rubana Yasmin Lupu (MSIT student) is currently exploring how SQL Injection vulnerability could be exploited in NoSQL database applications. The study currently focuses on Java/PHP applications accessing and storing data in MongoDB and finding best practices to secure database server and application implementation.
- Log data analytics (BSIT Capstone): Three BSIT students (Jeremy Fulbright, Patrick Hayde, Jeremy Miller) are currently working on log analytics projects where they will deploy an open source analytics tool named LogStash to perform log data analysis for security. The goal is to be able to visualize well known attacks over network (e.g., DoS) and through web applications (e.g., SQL Injection). The project is mentored by Dr. Shahriar and Dr. Zheng. We are expecting to send at least one BIST student to attend NCUR undergrad research conference (<http://www.ncurproceedings.org/>, first 50 KSU student travel to be supported by CETL) once we have some initial results.

IT – Ming Yang

- Ming Yang, Senior Personnel: NSF [TUES #1244697](#), Collaborative Research: Real World Relevant Security Labware for Mobile Threat Analysis and Protection Experience (09/2013 - 08/2016)

IT – Chi Zhang






- Thanks to the help of Jack Zheng and a program manager in a HIT company, I'm currently working with a BSIT capstone project team on "open source electronic health record systems". The project is an exploratory study of open-source EHR systems for an imaginary rural community health center. The purpose of this project is to:

1. Identify potential open source options
2. Identify the criteria by which the different solutions should be evaluated
3. Evaluate 3 different solutions against the criteria and set up each system
4. Analyze the clinical workflows using the systems
5. Based on the analysis, make a recommendation as to which open source system is the best choice should the community health center decide to go with an open source solution

The results of the project could potential help us reach out to the Health Information Technology for Economic and Clinical Health (HITECH) Georgia Chapter and the State Office of Rural Health (SORH) for collaboration on the NIH funding opportunities.

IT - Jack Zheng

Current active research grants:

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

- Affordable Learning Georgia Textbook Transformation Grant R2, 2015-2016. The State of Georgia's FY 2015 and FY 2016 budgets include funding to support a new USG initiative, Affordable Learning Georgia (ALG), which focuses on reducing the costs of textbooks. A key strategy is to provide grant-supported opportunities for USG faculty, libraries, and institutions to transform their use of textbooks and other learning materials into lower cost options. We had a grant to transform our textbooks used in all data and database management related courses department wide.

Publications:

- L. Li, G. Zheng, Y. Shen, R. Guo, "Which Collaboration Technologies Best Support Student Teamwork? An Empirical Investigation," 21st Americas Conference on Information Systems, Aug 13-15, 2015, Puerto Rico

Student Projects:

- A major product development (based on my previous creation and prototype on Windows). The product is called multi-dimensional perceptual maps, based on SOM clustering techniques and visualizations. A GRA is assisting me with programming and research.
- A major work on mobile web and mobile application navigation systems and designs. I have a book chapter proposal accepted in August. A GRA is working with me on literature research and writing. Dr. Chi Zhang is also participating.
- Dr. Hossain and I are leading a capstone team working on security log analysis and visualization using the Elastic platform. We planned to send the students to an undergraduate research conference if we have good outcomes.

Software Engineering and Game Design (SWEGD) Department






SWEGD – Jeff Chastine

External Funding:

- Educational Simulation of Railyard Safety Project, RailServe, FA 15-SP 15 (\$50,000)
- **Current Funded Project: Railserve Project (\$499,000):**

During the last year, Drs. Jon Preston and Jeff Chastine have been working closely with Railserve, a leader in rail switching services, to investigate how gaming and simulations can be used to increase safety in rail yard environments. Railserve is a division within the Marmon Group and has yards throughout the United States and Canada.

After the successful design and development of a prototype, Railserve has decided to continue its relationship with Kennesaw State University for the next three years. The new phase of the project involves converting an extensive, paper-based training manual into an interactive simulation of safely operating within a rail yard. Drs. Preston and Chastine have worked closely

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

with two undergraduate students in the Computer Game Design and Development program (Kyle Brannon and Javier "Ray" Ramirez) and will now expand the team to include additional undergraduate students in this funded research.

This is a wonderful example of the collaborative projects that provide benefit to the local community, undergraduate students, and the broader computing research field.

Publication:

- Kosoris, N., Chastine, J., "A Study of the Correlations Between Augmented Reality and Its Ability to Influence User Behavior". IEEE TCSIM, CGAMES 2015. 3rd place for best student paper

SWEGD – Rongkai Guo

- Current pending:

3D Virtual Environments for Learning
Research Experiences for Undergraduates Site Proposal
PI: Dr. James P. Werner
Logistics Manager: Dr. Michael Haungs
Mentor: Dr. Wasim Barham
Mentor: Dr. Rongkai Guo
Examiner: Dr. David Gillette
NSF REU
Collaborating with California Poly

- TOWARDS UNDERSTANDING AND DEVELOPING VIRTUAL ENVIRONMENTS TO INCREASE ACCESSIBILITIES FOR PERSONS WITH VISUALLY IMPAIRMENTS

PI: Rongkai Guo
Internal OVPR






Will submit on Sep 30:

- CRII: CHS: TOWARDS UNDERSTANDING THE CAPABILITY OF SPATIAL AUDIO FEEDBACK IN VIRTUAL ENVIRONMENTS FOR PEOPLE WITH VISUALLY IMPAIRMENTS

PI: Rongkai Guo
NSF CISE CRII www.nsf.gov/pubs/2015/nsf15569/nsf15569.htm

Published papers/journals

- Chatta, A., Hurst, T., Samaraweera, G., Guo, R., Quarles, J. "Get off the Couch: A Generalizable Approach to Convert Sedentary Commercial Games to Exergames" The ACM SIGCHI Annual Symposium on Computer-Human Interaction in Play (CHI PLAY), London, England, 2015.

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

SWEGD – Jonathan Lartigue

Please congratulate graduate student Hongyu Cheng, a member of our Upsilon Pi Epsilon chapter, for winning a 2015 UPE Scholarship Award. His award letter states "You were selected for this award on the basis of your academic record, extra-curricular activities and the glowing recommendation of your UPE Advisor. We expect and believe you will establish an admirable record for subsequent holders of this award to emulate."

Hongyu was inducted into UPE in **May 2015**. He is the third SPSU/KSU student to receive a scholarship award through UPE in the past three years.

Upsilon Pi Epsilon, founded in 1967, is the first and only international honor society for the computing and information disciplines and is endorsed by both the ACM and the IEEE Computer Society. Its mission is to recognize academic excellence at both the undergraduate and graduate levels in the Computing and Information disciplines.

SWEGD – Briana Morrison






- Briana B. Morrison, Lauren E. Margulieux, and Mark Guzdial. 2015. Subgoals, Context, and Worked Examples in Learning Computing Problem Solving. In Proceedings of the eleventh annual International Conference on International Computing Education Research (ICER '15). ACM, New York, NY, USA, 21-29. DOI=10.1145/2787622.2787733 <http://doi.acm.org/10.1145/2787622.2787733>
- Barbara J. Ericson, Mark J. Guzdial, and Briana B. Morrison. 2015. Analysis of Interactive Features Designed to Enhance Learning in an Ebook. In Proceedings of the eleventh annual International Conference on International Computing Education Research (ICER '15). ACM, New York, NY, USA, 169-178. DOI=10.1145/2787622.2787731 <http://doi.acm.org/10.1145/2787622.2787731>
The first paper - directly related to my dissertation work also won the Chairs' Best Paper Award.

SWEGD – Jon Preston

Current Funded Project: Railserve Project (\$499,000):

During the last year, Drs. Jon Preston and Jeff Chastine have been working closely with Railserve, a leader in rail switching services, to investigate how gaming and simulations can be used to increase safety in rail yard environments. Railserve is a division within the Marmon Group and has yards throughout the United States and Canada.

After the successful design and development of a prototype, Railserve has decided to continue its relationship with Kennesaw State University for the next three years. The new phase of the project involves converting an extensive, paper-based training manual into an interactive

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

simulation of safely operating within a rail yard. Drs. Preston and Chastine have worked closely with two undergraduate students in the Computer Game Design and Development program (Kyle Brannon and Javier "Ray" Ramirez) and will now expand the team to include additional undergraduate students in this funded research.

This is a wonderful example of the collaborative projects that provide benefit to the local community, undergraduate students, and the broader computing research field.

SWEGD – Paola Spoletini

- "Ambiguity as a Resource to Disclose Tacit Knowledge" A. Ferrari, P. Spoletini, S. Gnesi. 23rd IEEE International Requirements Engineering Conference (RE 2015).
This is the paper which I have received the best paper award.
- "BuildingRules: A Trigger-Action Based System To Manage Complex Commercial Buildings". A. Nacci, B. Balaji, P. Spoletini, R. Gupta, D. Sciuto, Y. Agarwal. ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2015) – Demo&Poster.
The demo was presented last week by Alessandro Nacci at the conference in Japan. (We had very good comments on this work and we are planning to submit a journal paper on the theory behind the demo.






SWEGD – Frank Tsui

A small inter-departmental group composed of Dr. Rongkai Kuo, Dr. Paola Spoletini, Dr. Lei Li, Dr. Sheryl Duggins, and myself (F. Tsui) have been running a Software Research Advancement Group (SRAG) since spring 2015. This group meets with undergraduate students, promotes research and mentors them on various student researches. We have successfully mentored students’ research work in undergraduate honor's research course, in undergraduate internship course, and in some PLSAMP summer research projects. SRAG is continuing this fall 2015 and will be hosting Dr. Amy Buddie who is directing undergraduate research and creative activities in CETL on [September 23, 2015](#) to speak about opportunities and funding in undergraduate research.

+++++

Past, Current and Upcoming Events in the College of Computing and Software Engineering:

2015 KSU Game Jam:

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

What do you get when you combine the ideas of a musician “jam session” and video game development? The result is an event that Kennesaw State University has hosted a staggering 14 times known as a “Game Jam.” KSU’s Marietta Campus was the site for a weekend-long 2015 Fall Georgia Game Jam, which hosted more than 170 students, alumni and community partners. The participating teams built a total of 24 games focused on the event’s theme of “The Sum of Our Parts.”

During the jam, the teams, some of which consisted of a single creator, planned and built their own playable video games. The contest lasted 48 hours, with development starting at 5 p.m. Friday and concluding at 5 p.m. Sunday. This led to many participants bundling up in sleeping clothes, robes and even shark hoodies. If you weren’t one of the dozens of participants pulling all-nighters, you were taking power naps on the cold, hard floor.

After completing their games, seven winning teams were selected to earn free passes to attend the October Southern Interactive Entertainment and Games Expo (SIEGE) in Atlanta. Winning team Coconut Monkey’s “Tiny Robot” lets players “explore the robot waste” in a side-scrolling platformer. Players are tasked with finding robot parts to level up their character and progress through the level. It features simple, yet accessible 2D graphics that prove that what’s old is new again. The single member team Garrett consisting of Garrett Leach created a game called “Assimilation.” Garrett’s game is a multiplayer digital card game in which players each play as their own alien species with the goal of assimilating as many humans as possible. It is a turn-based game where players choose to eat to survive or kill humans to assimilate them and grow stronger.

In Team Swagga Muffin’s “The Architect,” players guide a humanoid robot through a maze while pointing and clicking on a birds-eye view of the maze.






Team Build for the Stars created a game with their team’s name as the title, “Build for the Stars.” In Build’s game, players use a crane to stack objects in a physics-based environment. The goal is to stack enough objects to form a tower reaching into space.

A game was also selected to win the Game Jam Achievement Award. The award was given to Team Sharks, who had the “most complete game that best fit the theme.” Team Sharks’ game, “Fite 4 Sumthing,” is a side-scrolling combat platformer in which iconic figures from human history such as Joan of Arc and Clint Eastwood are brought into the future to fight off aliens. The game uses colorful and endearing hand-drawn art in everything from the character models to the control interface at the top of the screen.

This was the first Game Jam held since KSU and SPSU consolidated in January. The talents of both campuses were combined. Students from both the College of Computing and Software Engineering and the College of the Arts brought together technical expertise with artistic creativity.

Both KSU campuses are set to host the Atlanta Code Camp in October, where students can further hone their game development skills. These skills can then be put to use when Atlanta hosts a Global Game Jam in January 2016, in which more than 300 attendees are expected.

The CCSE Fall 2015 Welcome Cookout was held October 14, 2015 from 4:00 p.m. – 6:00 p.m. between the amphitheater and Norton Hall. This cookout welcomed our new students and welcomed back our

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

returning students. The CCSE faculty and staff grilled hamburgers and hotdogs for the students and served them cost-free to all CCSE students.

Tables for our computing student groups (ACM, AITP, 3C, etc) were set up so that interested students could talk with current members or the faculty advisors for the student group. This was a great event to allow our students to network with each other, faculty members, and a way to cultivate an academic environment, which they pride themselves to be a part of and wish to stay in.

CCSE Clubs/Groups:

ACM Student Chapter -

Supported by Department of Computer Science Dr. Sarah North, Faculty Advisor
Marcus Randall, Student President; E-mail: acm@kennesaw.edu; URL: <http://acm.kennesaw.edu>

ACM Student Chapter Activities – Fall 2015

September






1. Invited Speaker - Travelport Speaker; Hiring Opportunity for CSE Students, Presentation by, Ms. Renu Midha, Thursday, September 3, 2015, 12:30pm -1:30pm, Atrium J-161.
2. Lecture Series – Artificial Intelligence; Presented by, Dr. Michael Franklin, Tuesday, September 22, 2015, 7:00pm-8:00pm, Atrium J-266.
3. Student Event - Greek Heritage Night - A long standing tradition at SPSU/KSU. There will be a movie, the geek world, gaming and socialize with your fellow CCSE students. Wednesday September, 30, 8:00pm-10:00pm, Atrium, J-202.

October

4. Workshop Series: for ACM- ICPC Programming Competition, preparation, Presentation by, David Van Brackle, Chief Judge of the Southeast USA region of the ACM ICPC, Friday, October 2, 2015, 5:00pm-6:00pm, Atrium J-152.
5. Invited Speaker – Lockheed Martin at Marietta, Hiring Opportunity for CSE Students, Presentation by Ms. Jenna Shellhammer, Recruiter, Tuesday, October 6, 2015, 6:00pm-8:00pm, Atrium J-158.
6. Invited Speaker – The Lancope Company, Hiring Opportunity for CSE Students, Presentation, TBD, Cohosted with UPE.

November

7. Programming Competition - ACM-ICPC (Association for Computing Machinery-International Collegiate Programming Contest), The 2015 Southeast USA Regional Contest, Sponsor By IBM, Hosted by Georgia Tech, on Saturday, November 14, 2015, 8:00am-7:00pm. The ACM-ICPC has been the largest running computer programming contest in the world since the 1970s, and is a multi-tier, team-based, programming competition operating under the auspices of ACM headquartered at Baylor University. The contest is sponsored by IBM. This is 5th year that Kennesaw State University participating in this contest.

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

8. Student Event - Greek Heritage Night - A long standing tradition at SPSU. There will be a movie, the geek world, gaming and socialize with your fellow CCSE students TBD, 8:00pm-10:00pm, Atrium, J-1202.

December

9. Poster Session - Computer Science Student Exposition at Building A (student center) Ballrooms on the Marietta campus, is on Thursday, December 3, 2015, 5:00pm-8:00pm. Link to Spring 2015 poster session.

Each Semester, Computer Science Students featuring poster session of their research projects from Kennesaw State's undergraduate and graduate programs. KSU continues to grow and mature in significance with outstanding research from students and faculty. This Event is support by ACM student Chapter.

AITP Student Chapter:

Supported by Department of Information Technology, Dawn Tatum, Faculty Advisor
Felipe Spinolo, Student President, E-mail: fspinolo@students.kennesaw.edu.

AITP Happenings...Geeks Giving Back!






PowerMyLearning Project

Twenty students, one alumni and faculty advisor, Dawn Tatum, from the College of Computing and Software Engineering participated in a civic engagement project on September 16th at the PowerMyLearning warehouse. The group helped refurbish donated equipment and prepare the computer images with educational software so that PowerMyLearning will give to students in partnered Title I qualified schools in an upcoming workshop.

PowerMyLearning is a national non-profit organization committed to ensuring that all children are able to power their learning through a combination of technology and the people who matter most to their success – parents and teachers. They partner with schools serving low-income communities and provide professional development for educators and family engagement services. They also operate PowerMyLearning Connect, their award-winning free digital platform that already has registered users in more than 40% of public school communities across the nation and is growing fast. More information can be found at www.powermylearning.org. Students from our college have been volunteering 2 to 3 times a year since the fall semester of 2013. KSU CCSE Students and Alumni w/ PowerMyLearning Staff .

The students who participated in the day of service are as follows:

1. William Forsyth
2. William King
3. Quintin Williams
4. Sean Scrybalo
5. Timothy Daniel
6. Renato Anaya
7. Mique Moua
8. Hassan Keen
9. Clayton Brown
10. Denzel Maxey

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---

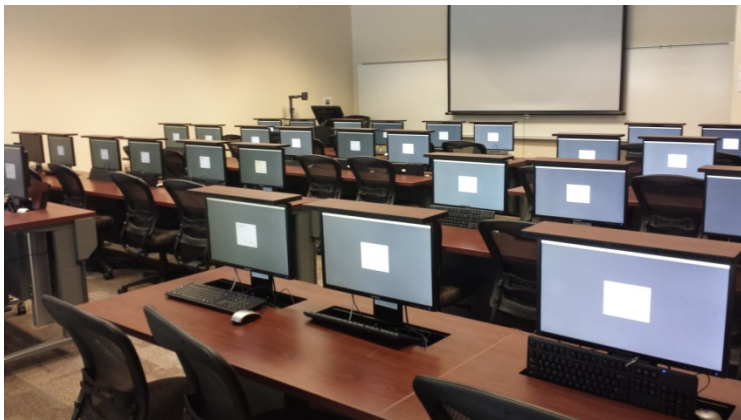
11. Andrew Chew
12. Ben Berzsengi
13. David Dewald
14. Tiana Smith
15. Isaura Romero
16. Harika Parvathareddy
17. Diamonte Thomas
18. David Rosa
19. Brittany Smith
20. Anokhee Jandhyala
21. Rian Stancel

GDC Student Chapter:

Supported by Department of Software Engineering and Game Development, Faculty Advisor, Dr. Jeff Chastine.






CCSE Labs Construction

Over the summer semester CCSE had five classrooms fully renovated as part of the final consolidation process. All five classrooms were outfitted as computer labs, either with physical or virtual desktops. CCSE Labs plans to begin phase two of the construction project soon to renovate an additional four classrooms into computer labs. At the end of this project we will bring our computer lab total to 15 rooms, allowing CCSE students extensive experience in hands-on projects and labs.



CCSE Labs Hosts the Cub Scouts

On Sunday September 13, CCSE Labs hosted a Game Design day for Cub Scout Pack 703 from Kennesaw. During the event CGDD students volunteered their time to teach fourth and fifth graders the basic elements of Game Design and taught them basic coding for beginners using Scratch. The event was a huge success. A very big thank you to CGDD students Aaron Ware, Sarah Tippens, Jarekq Aloisio and Chane Grant for donating their time for a great community event.

Publications		External Grants		Internal Grants		Grad Student Projects		Undergrad project	
--------------	---	-----------------	---	-----------------	---	-----------------------	---	-------------------	---