

Friday, October 23, 2020

10:00am – 01:00pm	Registration/Conference Navigation Training		
01:00pm – 02:00pm	Welcome/Opening Keynote		
Networking/Discussion			
Session	Track 1	Track 2	Track 3
Session 1 02:15pm – 03:30pm	Special Topics - Internet Research Agency’s Campaign to Influence the U.S. 2016 Elections: Assessing Linguistic Profiles via Statistical Analysis - Virtual Cluster for HPC Education - Deep Learning in Detection of Mobile Malware	Student Research - Credit Card Fraud Detection - Fileless Malware Detection - Maturity of the Malware Marketplace - LAMP Stack Performance Analysis	National Partner: zyBooks <i>Techniques to effectively teach a course online</i> Dr. Yamuna Rajasekhar
Networking/Discussion/Vendor Session Break			
Session 2 04:00pm – 05:15pm	Pedagogy 1 - Interdisciplinary Research Experience in Computer Science and Biological Sciences - Experiential Learning: Preparing Students for the Workforce through Faculty Mentorship and Feedback in Campus-based IT Projects - A Scalable RPG Project for Object-Oriented Software Development	Tutorial Should “Deepfakes” Be a Topic of Cybersecurity Course?	National Partner: Google Education <i>Programming with the Cloud</i> Laurie White
Networking/Discussion/Vendor Session Break			
05:30pm – 07:00pm	Reception & Poster Session Bring your favorite beverage and browse and discuss a variety of topics with our poster authors		

Saturday, October 24, 2020

08:00am – 01:00pm	Programming Contest	
Session	Track 1	Track 2
Session 3 08:00am – 09:15am	Pedagogy 2 - Online System Modeling and Documentation Using ROS Snapshot - SPIFS: A Short Project Instructional File System - Invited Presentation: Bringing Harmony to Computational Science Pedagogy	Open Discussion How are you doing? Dealing with the pandemic, social crises, and college financial issues and their effects on students, faculty, courses, programs, and institutions
Networking/Discussion Break		
Session 4 09:30am – 10:45am	Pedagogy 3 - Development of a Configuration Management Course for Computing Operations Students - Teaching Introduction to Programming Languages with a Database Twist - Auto-Generated Game Levels Increase Novice Programmers' Engagement	Panel Supporting Underrepresented Groups in STEM During Uncertain Times: A Case For Transfer Students from Rural SW PA.
Networking Discussion Break		
Session 5 11:00am – 12:15pm	Diversity & Inclusion - An Effort on Promoting K-12 Computer Science Education in Rural Region - Course Content as a Tool of Inclusivity for Black/African-American Women in Computing - The Effect of Gender on Student Self-Assessment in Introductory Computer Science Classes	Nifty Ideas/Hot Topics - Nifty Assignment in Computer Networking Laboratory - Partitioned-Hill Cryptosystems: A STEM Lab for AP CSA
12:45pm – 01:15pm	Conclusion/Awards	
01:15pm – 02:00pm	2021 Planning Meeting	

Welcome to the 2020 CCSC Eastern Conference

On behalf of the CCSCE 2020 Conference Committee, we would like to extend a warm welcome to those attending this 36th Annual Conference.

This year's conference was scheduled to be held at Hood College in Frederick, Maryland. In light of a global pandemic, our options were to cancel the conference or find a different, safe venue. The organizing committee decided to move the conference online, and we are delighted to see the response and everyone's participation. It proves that CCSCE is not just a conference but a community. Besides being the first CCSCE held online, this conference is a real testament to our community's ability to problem-solve, persevere, and move forward in the face of adversity.

Thank you to the educators from all levels of the computing sciences, including computer science, information systems, information technology, and so on, and the students in the related fields for attending the conference and contributing to the success of this Eastern Region Conference.

With the contributions from many of you, we have two days of excellent programs planned for the professional enrichment of our audiences, which include an invited keynote, paper presentations, workshops, tutorials, poster presentations, and a programming competition for the students. This year the conference had 26 professional paper submissions, out of which we have accepted 14 papers for an acceptance rate of 54%. All papers underwent a double-blind review process with on average papers that were reviewed by 3 reviewers.

The conference is supported by faculty from multiple institutions who served on the Conference Committee, as reviewers, etc. We want to express our sincere gratitude to everyone involved in making this conference a reality. Special thanks to all those who helped develop the program, coordinate the paper reviews, organized the programming competition, coordinated the keynote speaker, managed the production of the proceedings, coordinated panels, workshops, tutorials, nifty ideas, and lightning talks. Our gratitude also goes to the judges for the poster awards, the session chairs, and student volunteers. We also appreciate the continuous effort and support from the CCSC Eastern Region Steering Committee, and we are very grateful for the generous supports of the CCSC National Partners, Sponsors, and Vendors.

Lastly, this conference is unique because we also have a bitter-sweet "change of guard." Our colleague, John Wright (Juniata College), who has been the steward of several CCSCE conferences over the years, is stepping down as the CCSC Eastern Representative. John's contributions to our community and the CCSCE conferences are innumerable, and his work and always helpful disposition has been nothing but exemplary. We thank him for his tireless support and welcome Mike Flinn (Frostburg State University) as the new Representative.

We hope you have an excellent and productive conference!

George Dimitoglou and Jiang Li
Conference Co-Chairs
Hood College

Special Sessions

Keynote: The What's Next Economy

Jonathan Aberman, Dean, School of Business & Technology, Academic Affairs

The COVID-19 pandemic has changed our society and economy already, with many more challenges and changes to come. Jonathan Aberman, Dean of Marymount University School of Business and Technology is a national expert on innovation, economic trends and entrepreneurship. He believes that the United States has entered a new phase, which he describes as the "What's Next Economy?" He will discuss some of the hallmarks of the What's Next Economy and what it means for technologists, educators and policy makers.

About the Speaker: Jonathan's academic qualifications are in the fields of economics and law. He earned BA degrees from George Washington University (Political Science and Economics) and Cambridge University (Law). He subsequently obtained a graduate degree in Economics from the London School of Economics (MSc in Economics). He completed his legal education at Cambridge University (MA) and New York University (LLM). Jonathan Aberman is a highly respected thought leader on entrepreneurship and innovation. His experience as a venture investor, innovation consultant, university professor and media commentator gives him a 360-degree perspective on entrepreneurship and technology innovation.

National Partner: zyBooks - Techniques to effectively teach a course online

With universities in the COVID environment moving to online instruction, many instructors are having to teach courses online. In order to achieve the same student performance as in-person instruction, instructors have to break away from conventional teaching methods and adapt their teaching techniques. This talk presents an overview of zyBooks, which are interactive, online textbooks for the STEM fields that have proven to increase student confidence in STEM courses. The talk also outlines techniques to make online instruction interactive and engaging for the student. Additionally, student performance results are presented from an online computer science course taught at the University of California, Riverside.

About the Speaker: Yamuna Rajasekhar received her Ph.D. in Electrical Engineering from the UNC Charlotte. She served as a faculty member at Miami University where her research was focused on assistive technology, embedded systems, and engineering education. She is currently a Content Developer at zyBooks, a startup that develops highly-interactive, web-native textbooks for a variety of STEM disciplines.

National Partner: Google for Education – Programming with the Cloud

While there's a lot to learn about cloud computing, the cloud can also be used in classes as fundamental as programming courses with little change to the material being taught. The cloud can provide a uniform programming environment for students regardless of the computers they use to access it remotely. It can provide computing resources beyond what some students may have on their own computers. And there are even some cloud services that can be used to make even the simplest programming assignments more interesting.

Laurie White, Cloud DevRel, Google for Education

Faculty Papers

Virtual cluster for HPC education – Linh Ngo, Jon Kilgannon, West Chester University of Pennsylvania

Internet Research Agency's Campaign to Influence the U.S. 2016 Elections: Assessing Linguistic Profiles via Statistical Analysis – YuLin Bingle, William Burke, Micheline Al Harrack, Larry Blankenship, Nguyen Khoanam, Christopher Sokol, Sara Sadat Tabatabaie, Marymount University

Teaching Introduction to Programming Languages with a Database Twist – Suzanne Dietrich, Arizona State University

A Scalable RPG Project for Object-Oriented Software Development – Robin Givens, Randolph-Macon College

Interdisciplinary Research Experience in Computer Science and Biological Sciences – Parrish Waters, Jennifer Polack, University of Mary Washington

Auto-Generated Game Levels Increase Novice Programmers' Engagement – Michael Lee, New Jersey Institute of Technology

Deep Learning in Detection of Mobile Malware – Alex Mbaziira, Marymount University

Invited Presentation: *Bringing Harmony to Computational Science Pedagogy* – Richard Roth, William Pierce, Hood College

Development of a Configuration Management Course for Computing Operations Students – Charles Border, Rochester Institute of Technology

The Effect of Gender on Student Self-Assessment in Introductory Computer Science Classes – Ian Finlayson, The University of Mary Washington

SPIFS: A Short Project Instructional File System – Robert Marmorstein, Longwood University

An Effort on Promoting K-12 Computer Science Education in Rural Region – Jiang Li, Hood College

Online System Modeling and Documentation using ROS Snapshot – William Drumheller, David Conner, Christopher Newport University

Experiential Learning: Preparing Students for the Workforce through Faculty Mentorship and Feedback in Campus-based IT Projects – Susan Conrad, Marymount University

Course Content as a Tool of Inclusivity for Black/African-American Women in Computing – Edward Dillon, Krystal Williams, Morgan State University

Faculty Posters

Containerizing CS Learning Environments – Linh Ngo, Richard Burns, Si Chen, West Chester University of Pennsylvania

3D Printed Models for Teaching Data Structures – Samah Senbel, Sacred Heart University

Computational Thinking for Computer Science Majors: An Introduction to CS Education Career Pathways – Alan Jamieson, Lindsay Jamieson, St. Mary's College of Maryland

A Multi-Cloud Environment for Teaching Relational Database Services – Weidong Liao, Shepherd University

Introducing Computational Thinking to Pre-service Teachers – Jiang Li, Paulette Shockey, Jennifer Cuddapah, Christy Graybeal, Anthony Williams, Hood College

Low-Code/No-Code Software Development Platforms and their Uses in Computer Science and Information Technology Education – Weidong Liao, Osman Guzide, Shepherd University

Towards Understanding Privacy Trade-off In An Epidemic – Sajedul Talukder, Edinboro University

Privacy and Security Vulnerabilities in Health Care Infrastructure Mobile Technology – Sajedul Talukder, Edinboro University

Benchmarking the performance of RESTful applications implemented in Spring Boot Java and MS.NET Core – Hardeep Kaur Dhalla, University of Wisconsin-Stevens Point

Parsing performance of native JSON libraries in Java, MS.NET Core and Python: A comparative study – Hardeep Kaur Dhalla, University of Wisconsin-Stevens Point

Lesson Plan: An Interdisciplinary Approach to Teaching Cyber Warfare Concepts – Donna Schaeffer, Patrick Olson, Marymount University

Robotics-based Creative Expression for Middle/High School Female Students – Yanxia Jia, Arcadia University

Student Posters

Artificial Intelligence Operated Data Warehouse – Joseph Cvetovich, Harrison Linn, Kaylea Daigle, Phil Huddleston, Sam Houston State University

MyHealthChart Mobile App: Gives people control and access to their Medical Records – Jessica Byrd, Samuel McManus, Sam Houston State University

An Interactive Mobile Application for Skin Clinic – Khalid Noman, Ahmed Noman, Mohamed Barodi, Carilyn Santisteban, Sam Houston State University

Gear Shifting - Back to the Basics Phase 1 – Meghan Murphy, Frostburg State University

Homeostasis and Machine Learning in the Biology Classroom – Judith Lucas-Odom, Drexel University

Where Did the Time Go? An Android-Based Phone Time Management App – John Viaud, Vitali Surmach, Bilal Abdulmajid, Arcadia University

Resolving Dark Web Identities – Babur Kohy

A Template for Useful Proof of Work – Riley Vaughn

Student Research Papers

Fileless Malware and Programmatic Method of Detection – Pipop Nuangpookka, Zelalem Mengistu, Ghadya Bafail, Marymount University

Maturity of the Malware Marketplace a Disturbing Trend using Probability Density Function – Ana Valentin, Thomas Kim, Marymount University

Performance analysis of the LAMP stack compared to its variants in a single page web application environment – Robert Kohibus, Frostburg State University

Credit Card Fraud Detection: An Evaluation of SMOTE Resampling and Machine Learning Model Performance – Ran Xia, Faleh Alshameri, Marymount University

Workshops, Tutorials, Panels, Nifty Ideas

Tutorial: Should "Deepfakes" Be A Topic Of Cybersecurity Course? – Penn Wu, DeVry University – Sherman Oaks

Panel: Supporting Underrepresented Groups I STEM During Uncertain Times: A Case for Transfer Students from Rural SW PA. – Natalya Bromall, Karen Poullet, Fred Kohun, Diane Igoche, Robert Morris University

Nifty Idea: Partitioned-Hill Cryptosystems: A STEM Lab for AP CSA – John Pais, Ladue Horton Watkins High School

Nifty Idea: Nifty Assignment in Computer Networking Laboratory – Wen-Jung Hsin, Park University

Thanks

Many thanks must be said, not only to our participants in the conference, but to all who submitted works to the conference. We would not be having this conference without you.

We thank our hosts and conference committee co-chairs, George Dimitiglou and Jiang Li, and the CCSC:EA 2020 Conference Committee. They put in many, many hours working on the usual conference activities plus the work in discerning how to move this conference online in the face of the COVID-19 pandemic.

We thank the CCSC Eastern Steering Committee for their guidance and support of the conference. We thank the CCSC National Board, without whom the 10 regional conferences that the consortium puts on each year would not be possible.

We thank our sponsors, CCSC, ACM, and UPE, for their continued support of computing education.

We thank our national partners for their support of our conferences and hope that the members of our region return that support to our