2018
The Symposium on Computing at Minority Institutions
April 5-8, 2018, New Orleans, Louisiana
GAMING
graphics Music
CompUtainment
visualization ANIMATION
Science Gateways Community Institute Young Professionals
http://www.admiusa.org/admi2018/
### Thursday – April 5, 2018
6:00 - 8:00 PM | Board Meeting/Dinner

### Friday – April 6, 2018

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<tr>
<td>7:30 AM - 5 PM</td>
<td>Registration</td>
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<tr>
<td>7:30 AM - 8:15 AM</td>
<td>Breakfast</td>
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<tr>
<td>8:30 AM - 8:45 AM</td>
<td>Opening Session / Welcome</td>
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<tr>
<td></td>
<td>Dr. Rebecca Caldwell, President of ADMI, Winston-Salem State University</td>
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<tr>
<td>8:45 AM - 9:30 AM</td>
<td>Keynote Speaker</td>
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<td>Dr. Kayra Hopkins, Technical Director at Pixar</td>
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<td>9:30 AM - 10:30 AM</td>
<td>Faculty Session: Dr. John Sands, CSSIA</td>
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<td>Student Session: Dr. John Sands, CSSIA</td>
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<td>10:30 AM - 10:45 AM</td>
<td>Break</td>
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<td>10:45 AM – 11:45 AM</td>
<td>Faculty Session: Faculty Opportunities</td>
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<td>Dr. Cheryl Hinds, NSU, Dr. John Trimble, TUT</td>
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<td>Student Session: Internship Roundtable</td>
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<td>Dr. Elva Jones, WSSU</td>
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<td>Student Session: Graduate School</td>
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<td>Dr. Cheryl Seals, AU</td>
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<td>11:45 AM - 12:30 PM</td>
<td>Faculty Paper Session</td>
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<td>Student Session: Networking and Establishing Professional Brand</td>
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<td>Mr. Todd Singleton and Mr. Etoulia Salas, Intel Corporation</td>
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<td>12:30 PM - 2:00 PM</td>
<td>Luncheon Speaker: Mr. Todd Singleton, Intel Corporation</td>
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<td>2:00 PM - 4:00 PM</td>
<td>Cybersecurity Competition - Dr. John Sands, CSSIA</td>
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<td>Computer Science Quiz Bowl – Dr. Jacqueline Jackson, JSUMS</td>
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<tr>
<td>4:00 PM - 6:00 PM</td>
<td>Professional Networking and Graduate Fair – Intel, Graduate Programs</td>
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### Saturday – April 7, 2018

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<tr>
<td>7:30 AM - 12:00 PM</td>
<td>Registration</td>
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<td>7:30 AM - 8:15 AM</td>
<td>Breakfast</td>
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<tr>
<td>8:30 AM - 10:30 AM</td>
<td>Faculty Session</td>
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<td></td>
<td>Dr. J. Adam Jones, University of Mississippi (8:30-9:30)</td>
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<td></td>
<td>Dr. Jacqueline Jackson – Implicit Bias (9:30-10:20)</td>
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<td></td>
<td>Student Workshop – Deep Reinforcement Learning Agents on Atari 2600 Games - Gary Barnett and Tripti Singhal, NVIDIA</td>
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<td>10:20 AM - 10:30 AM</td>
<td>Break</td>
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<tr>
<td>10:30 AM - 12:15 PM</td>
<td>Student Poster Session – Mr. Timothy Holston, MVSU</td>
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<tr>
<td>12:30PM - 1:30 PM</td>
<td>Luncheon Speaker: Ms. Jessica Jones, Ph.D. Candidate at Uni. of Florida</td>
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<td>1:30 PM - 3:30 PM</td>
<td>Student Papers</td>
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<td>3:30 PM - 6:00 PM</td>
<td>Break</td>
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<td>6:00 PM - 8:00 PM</td>
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<td>Speaker: Dr. Constance Bland, Provost at Mississippi Valley State Uni.</td>
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It is an honor and pleasure to officially welcome you to the Association of Computer Information Science and Engineering Departments at Minority Institutions to New Orleans, Louisiana! The theme for the Twenty-third Annual Symposium of the Association of Computer Information Science and Engineering Departments at Minority Institutions (ADMI) is “CompUtainment”. We are extremely excited about hosting two student competitions: the Cybersecurity Challenge and the Computer Science Bowl.

For the next two days ADMI will continue our long tradition of showcasing faculty and student research. ADMI 2018 will offer high quality technical activities, including research paper sessions, poster sessions, workshops, and demonstrations. There will be multiple opportunities for networking and professional development. Again this year, we focus on graduate education by offering a Graduate School Recruitment Fair. Please refer to the Schedule at a Glance and take advantage of all of our intellectually stimulating activities.

The ADMI Board of Directors would like to thank our symposium sponsors and speakers for their generous support. We also extend a special thanks to the Symposium and Local Arrangements Committees for their untiring labor to make this conference a great success.

We applaud your attendance! We hope you find this conference both interesting, motivating, and energizing and that you enjoy meeting up with old friends and forming new connections. We look forward to receiving your feedback on this conference and to seeing you again at ADMI 2019!

WELCOME TO ADMI 2018!

Thanks for joining us,
E. Rebecca Caldwell
E. Rebecca Caldwell, Ph.D.
Dr. Kayra M. Hopkins is a computer graphics software engineer, most recently serving as a technical director on both the Global Technology and Rendering teams for the Academy Award winning Pixar film, Coco.

Raised in Oakland, California, Dr. Hopkins earned her B.S. in Computer Science at Spelman College and M.S. in Computer Science at Michigan State University. As a GEM and NASA Harriett Jenkins Fellow, she went on to complete her PhD at Michigan State, researching improved algorithms for automated 3D skeletal animation.

In 2015 she found her way back to the warmth and diversity of her beloved Oakland to work at Pixar Animation Studios. Compelled to confront some of the pressing issues of lack of diversity, inequality and disparate representation in STEM and filmmaking, Dr. Hopkins co-founded, The Palette, Pixar’s employee resource group focused on people of color.

Kayra has a deep passion for supporting youth and a strong commitment to her community which is quite evident when one examines how and where she devotes her time. She has served on the Anita Borg Institute Systers Pass-It-On Awards committee, the African Queens Dance Company executive board and the Museum of African Diaspora Vanguard Council. In her "free time", Dr. Hopkins enjoys helping young people explore their interests in STEM fields by mentors for CODE2040 and volunteering with Black Girls Code and Girls Who Code.

Dr. Hopkins has previously worked for NASA, Intel Corporation, and the Johns Hopkins University Applied Physics Lab. Aside from her work in 3D animation, her research interests include interactive data visualization and STEM education policy.
John Sands is the director of the Center for Security and Information Assurance (CSSIA) NSF ATE project #9950037 which is one of the country’s first comprehensive cyber defense centers. John has over thirty years of experience in CTE education specializing in information technology management and cyber defense. He lead the efforts to develop and implement a nationally recognized dual credit program between Moraine Valley Community College and over a dozen local high school CTE programs in IT and Cyber Security.

As a thirty-year employee of Moraine Valley Community College, Dr. Sands is currently the department chair of the Computer Integrated Technologies department. John has also developed and taught several classes for Northwestern University Graduate School of Continuing Studies in the area of Information Security Management. John has served as a senior researcher for Cisco Learning Institute in the area of career and technical education. John holds several industry certifications including CISSP, CCIA, A+, Network+ and Security+.

Dr. Cheryl Hinds is an assistant Professor of Computer Science at Norfolk State University. She received a BSc. in Economics from the University of the West Indies, a M.A in Computer and Information Science from City University of New York and the Ph.D. Computer Science from The University of Idaho. Dr. Hinds teaches Database Concepts and Design, Computer Programming, Database Security and Management of Information Security. Her research interests include Wireless Sensor Network Security, and Usability Security. She works with the K-12 community to provide cybersecurity summer camps for K-12. She has a wide range of hobbies which include fishing, gardening, solving jig-saw puzzles and stamp collecting.
Dr. John Trimble is currently serving as a Fulbright professor at Tshwane University of Technology’s Industrial Engineering Department. This is his second appointment as a Fulbright professor. He served as a Fulbright professor at the National University of Science and Technology (NUST) in Zimbabwe from 2003-2004. He holds a BSc in Engineering from Northwestern University, MSC in Computer Science from Stanford University, MSc in Operations Research from UC Berkeley and a PhD in Industrial and systems engineering from Georgia Tech. Trimble has over 25 years of teaching experience at various universities in the USA, Zimbabwe, Rwanda and South Africa. He has served as Head of Department at Morris Brown College and Dean of ICT at Umata Polytechnic University. Prior to joining the academy, Trimble worked in industry as a researcher, software developer and manager. Over the past 15 years, Trimble has been heavily involved with research and projects concerning the use of appropriate technology. He has led in the organizing of 6 international conferences on appropriate technology, held across Africa in Zimbabwe, Rwanda, Ghana, South Africa and Kenya. For the past two years, Trimble has worked closely with the African Journal of Science, Technology, Innovation and Development (AJSTID) serving as co-editor of a special issue of appropriate technology.

Dr. Elva Jones is a Professor of Computer Science at Winston-Salem State University and the Chair of the Department of Computer Science. Dr. Jones received her B.S. from Winston-Salem State University, her M.S. from the University of North Carolina at Greensboro, a second M.S. from North Carolina State University, and her Ph.D. from North Carolina State University. Her research interests include Visualization, Data Retrieval (Space Science), Multimedia Systems, System Design & Development, Human Computer Interaction, and Computer Science Education.
Dr. Cheryl Seals is an Associate Professor in the Computer Science and Software Engineering Department at Auburn University. Dr. Cheryl Seals is an assistant professor in Auburn University's Department of Computer Science and Software Engineering. She received her B.S. from Grambling State University, M.S. from North Carolina A&T State University and Ph.D. from Virginia Tech with all of her degrees in the area of Computer Science. Dr. Seals studies the area of novice programmers utilizing visual programming techniques, user interface design projects to improve interaction design, and game design & development and the dimensions games can add to computer literacy. She has a vested interested in programs that are community centered, increase diversity in technology, and targeted at helping today's youth strive for a better tomorrow. She continues to work with programs that provide computer interventions for students in the elementary, middle and high schools in the local area.

Todd Singleton is a technologist with nearly 20 years of experience in a wide range of Silicon Valley software companies - from small startups to IBM & Intel. At Intel, he currently works in an artificial intelligence group, focusing on memory-based reasoning solutions. Prior to this, he led the worldwide sales team for Mashery, a business focused on enabling the API economy. In addition to working as a sales leader, Todd worked as a Software Architect, Chief Evangelist, and a Software Engineer. At IBM, he led an engineering team to build data center software for the Eclipse Foundation and was a member of IBM's Global Architecture Board.

He earned a master's degree in Electrical Engineering from Stanford, where he also taught Public Speaking and took 1st place in Stanford's 2002 Global Social Entrepreneurship Challenge. He earned an undergraduate degree in Electrical and Computer Engineering from Duke University while playing four years of Varsity Basketball for Coach K.
Dr. Jacqueline M. Jackson received the B.S. Degree in Computer Science from Jackson State University, Jackson, MS in 1995, and the M.S. and Ph.D. Degrees in Computer Science and Software Engineering from Auburn University, Auburn, Alabama, in 1997 and 2000 respectively. In 2000, she joined the Department of Mathematical Sciences and Technology at the University of Arkansas at Pine Bluff, Pine Bluff, AR as an Assistant Professor. Relocating to MS in 2007, Dr. Jackson joined the faculty of the Computer Science Department at Jackson State University where she is currently an Associate Professor. Dr. Jackson has served as a faculty mentor to students participating in the following programs: NSF BPC-AE: Collaborative Research: The Alliance for the Advancement of African American Researchers in Computing (A4RC), VACCINE Program: Visual Analytics for Command, Control, Interoperability, National Security and Emergencies, sponsored by Purdue University/Department of Homeland Security and NSF SPICES (Students Promoting Interest in Computing supported by Educational Scholarships). Dr. Jackson’s research interests include Computational Thinking, Broadening Participation in Computing, STEM Workforce Development and Strengthening the STEM Pipeline through outreach to Middle Schools. Dr. Jackson is Co-PI of a NSF grant to expand the network of STEM scholars through the ADVANCE Women of Color Summer Writing Retreat.

Gary Burnett has been an NVIDIA Solutions Architect for just under one year. His background is in Computer Science and Neuroscience. He is currently working in using Deep Learning and GPU acceleration for Healthcare applications.
Tripti Singhal has been a NVIDIA Solutions Architect for a little over a year. She has a background in Computer Science and Technology Management. She is currently working in the Deep Learning space for the Professional Services Solutions Architect Team.

J. Adam Jones is an Assistant Professor in the Department of Computer & Information Science in the School of Engineering and the Neuroscience Minor Program at the University of Mississippi. Jones's teaches topics including Virtual Reality, Data Science, Human-Centered Computing, Computer Graphics, and C/C++ Programming. His research focuses on utilizing virtual environments and psychophysics to better understand how humans perceive, behave, and interact with the world around them, whether real or synthetic. This research feeds back into the creation of more perceptually accurate, higher fidelity virtual and augmented environments.

Dr. Jones served as a Postdoctoral Fellow in the Virtual Environments Group in the Division of Human Centered Computing at Clemson University and as a Postdoctoral Fellow in the Mixed Reality Lab at the University of Southern California. Jones earned his PhD in Computer Science with a graduate certification in Cognitive Science from Mississippi State University.
Jessica Nicole Jones attended Hampton University in Hampton, Virginia where she graduated Magna Cum Laude with a Bachelor of Science in computer science in 2011. While at Hampton, Jessica also received a minor in Leadership Studies from the William R. Harvey Leadership Institute. After leaving Hampton, Jessica attended Clemson University in Clemson, SC where she earned a Master of Science in Computer Science with a concentration in interactive computing in the Fall of 2014. In 2018, Jessica will receive her Ph.D. in Human-Centered Computing, under the advisement of Dr. Juan E. Gilbert, from the Computer and Information Science Engineering Department in University of Florida's Herbert Wertheim College of Engineering.
A native of Friars Point, Mississippi, Dr. Bland began her career as an instructor of mathematics and computer science at Coahoma Junior College in Clarksdale, Mississippi. In 1991, she began her tenure at MVSU. After proving herself as an instructor and professor, Dr. Bland was appointed Chair of the Mathematics, Computer and Information Sciences (MCIS) department in 1999. She served in that capacity until March 2014 when she was named Vice President for Academic Affairs.

Dr. Bland has given 26 years of service to MVSU and has actively demonstrated her passion and commitment to the University, its faculty, students and staff. She has established a great working relationship with the community and is well respected. Under her leadership, Dr. Bland helped MCIS receive numerous grants (a graphing calculators grant, the National Science Foundation (NSF) Odyssey I, Odyssey II and Odyssey III Scholarship grant, National Aeronautics and Space Administration (NASA) GIS/Remote Sensing grant and the NASA PACE grant) to enhance the quality of STEM education and retention at MVSU. She’s responsible for developing MVSU’s annual Women in Science and Technology (WIST) Conference which is designed to encourage young girls in grades 7th through 12th to consider majoring in STEM disciplines.

Dr. Bland holds an associate’s degree in mathematics from Coahoma Junior College. She received a Bachelor of Arts in mathematics, a Bachelor of Science in computer science, a master’s degree in computer science and a doctoral degree in computer engineering from the University of Mississippi.

As an accomplished researcher, Dr. Bland has authored and co-authored several publications - Using Alice to Decrease Attrition in CS1, Road Map for Teaching Introductory Programming Using LEGO Mindstorms Robots, Java Resources for Computer Science Instruction and Distance Education: What is appropriate, What is not and Agents, Profiles, Learning Styles and Tutors.

Dr. Bland’s philosophy is echoed in her work ethic. She states, “Students at MVSU are brilliant beyond reasons that we can fully explain or understand. Their intelligence needs to be focused in the academic arena so they can soar to heights that they can only fathom in their wildest imagination. This is the call of Academic Affairs at Mississippi Valley State University!”
## Graduate Papers

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<td>Simulations of Quantum Routing Games</td>
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<td>Elizabeth LaGreca</td>
<td>How a Blockchain Architecture Model Enhances the Security of the Internet of Things</td>
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<td>1   William Brown III</td>
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<td>5   Kendall Lane</td>
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<td>8   Marjani Peterson</td>
<td>The Traceability of Bitcoins</td>
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<td>9   Zhanel Tucker</td>
<td>Psychological Reasoning Behind User Password Compositions and Behaviors, and the Associated Cybersecurity Risks</td>
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<td>Project Ballot Creator</td>
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<td>Michaelangelo Fields, Jr.</td>
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<td>Haven Hairston</td>
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<td>Austin J. Hodge</td>
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<td>Thomas Hilton Johnson, III</td>
<td>Exploring the Many Factors that Cause Wikipedia Users to Remain or Depart in the Wikipedia community</td>
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<td>Kizito Nwaka and Lakshay Khurana</td>
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<td>Malik Roy</td>
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## Undergraduate Student Posters

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Using Virtualization and Virtual Reality to Teach Cybersecurity

Presenter: Dr. John Sands.

Abstract

This session will introduce new tools available to educators teaching cybersecurity programs. These tools incorporate cloud computing, virtualization, and virtual reality. Learn how to bring gamification into your curriculum. Attendees of this session will be able to take a guided tour of a new gamification environment designed to teach cybersecurity courses. Learn how this site can also be used to host student cyber competitions.

The World of Virtual Reality and Augmented Reality

Presenter: J. Adam Jones

Abstract

The world of virtual reality (VR) and augmented reality (AR) has undergone many changes in the past few years. From the HTC Vive to the MS Hololens to Oculus VR, public interest in these technologies is at an all-time high. Though research-grade systems have been around for decades, this is the first time that the technology has been both accessible and affordable for nearly anyone with spare time and an internet connection. This factor, more than anything else, is fueling AR/VR's current renaissance. This has led to VR appearing in new and unexpected places. What impact will this technology have in the classroom? What can (and can't) we do with these technologies? Are there job opportunities for computer science students with experience in VR development? In this talk, we'll explore these questions by looking at where these technologies have been and where they are going.

Implicit Bias Training, A Must for Every Academic Program

Presenter: Dr. Jacqueline Jackson

Abstract

Academic departments are charged with providing top-quality educational opportunities for students. Often times, the focus of these opportunities is on the development of a student's technical skills. However, given recent headlines in the media regarding gender bias, sexual harassment, discrimination and implicit bias, academic programs should consider updating program offerings and curriculum to address these topics so that students are prepared for the workforce. This presentation will focus on implicit bias and show how it can be incorporated into a Computer Science curriculum.
Deep Reinforcement Learning Agents on Atari 2600 Games

Presenter: Gary Barnett and Tripti Singhal

Abstract:

Learn the basic principles of deep reinforcement learning by experimenting with OpenAI gym. You’ll use classic Atari games to:

- Experiment with a simple game to learn OpenAI API calls
- Train a neural network through in-game experiences to choose the next best action from the screen’s raw pixels and the current score
- Visualize training progress while continuing to train an “intermediate” agent trained for about 20 hours

Upon completion, you’ll be able to play against your best network and take home code that you can use to train agents in other Atari games.
Gamifying STEM Courses for Motivating and Engaging Students

Darina Dicheva, Keith Irwin, Christo Dichev, Xiuping Tao, Elva Jones
Winston Salem State University

Abstract: In recent years, gamification – the use of game design elements in non-game contexts – has seen rapid adoption. The rising interest in it is reinforced by recent behavioral studies, which reveal that a core set of intrinsic motivators exists in all of us: the desire to improve, to achieve, to direct our own lives and to connect with others. These motivators can be stimulated by the right experience.

Several studies have been published arguing that gamification can be successfully implemented in educational contexts to improve student motivation. However, a main obstacle that instructors face is the lack of educational software that can be used to support course gamification. A recent study examined five popular CMSs (Moodle, Blackboard Learn, Edmodo, Schoology and Canvas) for their specific support for gamification. The study shows that although the prevalent CMS’s offer some gamification support they do that at a very shallow level. This causes a significant burden on instructors who want to apply gamification to their courses. To address this problem we are implementing a course gamification platform – OneUp Learning – that is aimed at facilitating the process of gamifying academic courses and enabling tailoring of the gamification features to meet the vision of the course instructor. The platform targets STEM courses that concentrate on skill development rather than memorization. To the best of our knowledge, it is the first highly configurable platform for gamifying courses or other structured learning activities.

In this presentation, we describe the platform by presenting the principles, the provided gamification support and the results of a usability study. The focus of the presentation is on the support for the instructors. A special attention is given to the gamification configuration, learning analytics, and visualization modules of the platform. The configuration module provides support for the instructor to select and configure the game elements they want to incorporate in the organization of a specific course. OneUp currently supports the following game elements: points (skill points, challenge points, activity points), badges, levels, leaderboard, avatars, virtual currency, immediate feedback, and freedom to fail. The visualization module displays the results of the learning analytics intended to summarize the individual learners’ and class performance, progress, and achievements. The aggregated information informs the instructor about all aspects of the student use of the platform thus allowing them to efficiently manage and adjust the instructional process. The platform gives the instructors flexibility and freedom to choose how to apply gamification to their specific courses which is essential for an appropriate and effective use of this promising technology for improving student motivation and engagement in the learning process.

The poster also presents the results of a usability testing of OneUp that was conducted using the Software Usability Measurement Inventory (SUMI) and was intended to provide both an assessment from an end user perspective and also diagnostic information for areas that need improvement.
Simulations of Quantum Routing Games
Ricky Dixon
Mississippi Valley State University

Abstract: Routing games are formulated on a collection of source-sink pairs in a directed graph. Players choose how much information to pass along each edge in continuous units. Each edge has time delay, or latency. The selfish routing case is where the players will try to minimize their own latency. This is often different from the socially optimal case which optimizes the global cost. The goal of this research is to utilize quantum correlations to improve the equilibrium flow from the classical case. Because of previous research done on quantizing classical game theory we believed routing games would benefit from these correlations. Initially we used a best response method with four strategy choices and attempted to find a Nash equilibria (N.E.). After finding that the N.E. was the same as the classical condition we decided to use a simulation of the routing game. In each iteration of this simulation players calculate a difference in latency and update their quantum strategy choices in attempts to converge on an equilibrium based on the selfish routing case. We also used a simulation where we introduced a factor of randomness, in which there would be a random amount of latency in each iteration of the simulation.

Ethical Hacking Training
Gregory Goddard and Gina Bullock.
North Carolina A&T

Abstract: This student paper reports on training to become an Ethical Hacker with research done at North Carolina A&T State University. We are creating a virtual environment to conduct hacking sceneries using different operations systems. The main tool I will be using is VirtualBox to host my three test environments. My three environments will include Kali Linux, which I will be using as an attacker, Metasploitable, which I will be using as my victim machine, and Microsoft edge with Windows 10 will work as a realistic work computer. The three virtual machines will work as three separate machines with on as the attacker and the other two as the victims. This allows the user to create realistic network penetration tests.

Cybersecurity and the Geographic Information System
Courtney Hayslett and Jean Muhammad
Hampton University

Abstract: This study aims to analyze The Geographic Information System as it relates to cybersecurity infrastructure. Through the use of geographic information systems (GIS), companies can take their business to a new level to better understand how they can reach their target market and become more marketable today. Detailed analysis that includes research on currently used GIS server on the campus of Hampton University are accurately displayed in this whitepaper.
Implementing Dynamic Challenge-Response Authentication for Raspberry Pi Systems

Winston Hill, Xiaohong Yuan and Farid Dowla
North Carolina A&T State University

Abstract: There has been a rapid increase in the Internet of Things (IoT) in recent years. Raspberry Pi is an inexpensive computer system often used with Internet of Things (IoT). For a network connected with Raspberry Pi computers, it is necessary to authenticate one Raspberry Pi with another, and secure the messages sent between two Raspberry Pi computers. This paper describes a dynamic user challenge response system implemented for user authentication between two Raspberry Pi computers. For each user authentication, the server generates a challenge which is combined with the user password and then hashed by the client. The implementation of this system and the attacks this system can prevent or cannot prevent are discussed.

Stuxnet and International Policies

Charles Jones and Danny Barnes
Hampton University

Abstract: This research project discusses a common threat that is present in the world that we live in today on the front of cybersecurity as well as cyberspace. Among all the various cyber-attacks that exist in our world today, Stuxnet has taken a front seat when discussing the different types of threats that create the potential to harm us users on a day to day basis. This form of threat is something that has been plaguing users for years and has caused financial manipulation for businesses, and private citizens as well. This research project will discuss the threat that has been present in the past 5-10 years and will provide an in-depth study of what occurred and what could have been done to prevent this type of attack from happening. The topic of risk assessment and vulnerability will be analyzed as well.

How a Blockchain Architecture Model Enhances the Security of the Internet of Things

Elizabeth LaGreca and Chutima Boonthum-Denecke
Hampton University

Abstract: Blockchain is often categorized as a “disruptive” technology. That is because its ability to digitize, decentralize, secure and incentivize the validation of transactions gives blockchain the potential to fundamentally change a multitude of major industries including the healthcare, aviation, logistics, shipping, transportation, automotive and manufacturing fields.

Another broad field in which the use of blockchain may bring fundamental change is information technology security. As technology becomes more pervasive in our everyday lives, the need to secure IT objects and information against attack becomes increasingly critical. This paper describes how Blockchain might dramatically enhance the security posture of one area of information technology, the Internet of Things (IoT).
Examination of Steganography Techniques in Images
Jibri Ward, Danny Barnes and Chutima Boonthum-Denecke
Hampton University

Abstract: This paper will briefly address cryptography as a solution to the problem of privacy of information. Furthermore, this paper will examine the use of digital steganography as a solution to the problem. Different forms of steganography will be compared, and will be examined with the combination of cryptography. The use of this study will ultimately aid in the conversation of the practical use of digital steganography.

Predicting Types of Irony Though Sentiment Analysis on Twitter Data
Antoine Whitaker and Chutima Boonthum-Denecke
Hampton University

Abstract: Irony can potentially be difficult to detect while verbally conversing with someone. It is near impossible, in most cases, to detect in text due to the absence of face-to-face contact and voice intonation. With the increasing population of people using social media, a lot of misunderstandings and conflicts will arise between different cultures interacting on various social platforms. The purpose of this study is to use various combinations of R, parsing, and data analysis tools in order to predict if tweets are using irony. We believe that through these means, detecting irony in twitter is possible and this added feature will help bridge the gap between cultures.
Undergraduate Student Paper Abstracts

Worth the Risk of Forefront Technologies
William Brown iii and Jean Muhammad
Hampton University

Abstract: This study aims to discuss the long-term effects of the many different benefits and repercussions of new advancing technology and if users want and are ready for this technological leap. It also includes a survey and survey analysis that includes research from students on their view point of the matter to make proper analysis regarding the issue.

Handling Evidence in a Computational Framework for Identity
Hannah Foster, Yasmin Eady, Francis Carrasco Serrano, Janelle Mason and Albert Esterline
North Carolina A&T State University

Abstract: We are interested in determining how evidence fits together in a case in addition to formulating the identity of agents from both the cyber and physical environments. Currently, we are constructing a computational framework that focuses on physical evidence from a crime scene, but it naturally extends to the cyberworld. The foundation of our framework is Barwise's situation theory. In this paper, we focus on evidence from a crime scene, how we use Dempster-Shafer theory to combine evidence, show when and how open world assumptions (OWA) and closed world assumptions (CWA) can exist within a case, and how conflicting evidence is handled using Dempster-Shafer theory.

Internet of Things and Personal Data Security
Douglas Harmon and Jean Muhammad
Hampton University

Abstract: This paper focuses on the rise of Internet of Things (IoT) devices in American households and their corresponding benefits, applications, and risk to user lifestyle and security. The average person takes a plethora of precautions to secure their personal belongs in a physical sense but now that said belongings have an online presence, this idea begins to fall apart. After reading this document, one will become familiar with common vulnerabilities found with usage of said devices, the different types of data that are unknowingly exposed, the inherent level of security most devices possess, and recommendations to further improve home security when owning such devices. All information presented in this paper was ascertained through analyzing network data of consenting households and literary review.
Using SMS as an Interface for Virtual Mentoring System

Leron Julian and Kinnis Gosha
Morehouse College

Abstract: Research has been done that has explored the use of embodied conversational agents as mentors in faculty-student relationships. This system requires users to go to a unique website to interact with the conversational agent. This paper presents the design and development of a conversational agent mentor that uses a more pervasive application for dialogue, short message service (SMS). The SMS conversational agent is constructed to be used as a virtual mentor to mentor undergraduate computer science majors at a Historically Black College (HBCU) who are considering pursuing a graduate degree in computing. A study has been designed to compare the effectiveness of the SMS conversational agent to the original conversational agent, an embodied conversational agent (ECA).

The Use of Technology in Self-Driving Cars

Kendall Lane and Jean Muhammd
Hampton University

Abstract: This paper aims to analyze the use of technology in self-driving cars. Automakers and tech companies are developing cars that will be on the road by using complex technology. The product will need to produce superhuman senses and software to perfectly perceive and understand the world around them. This study will discuss self-driving cars in pertaining to how they work and what it will mean for the future. This study utilizes scholarly articles and surveys from consumers to make the proper analysis and recommendations regarding the future of the automated car.

Implementing the WebID+Biometrics Protocol

Taylor Martin, Justin Zhang, William Nick and Albert Esterline
North Carolina A&T State University

Abstract: We report on the implementation of a protocol that is built off the W3C's WebID protocol and genetic and evolutionary feature extraction technique. The goal is to seamlessly integrate WebIDs and biometrics so that the security of user accounts is increased. We cover the background of biometrics, the semantic web, and WebIDs. We indicate how the integration should work once the protocol is finalized and review the current state of the implementation. In the future, we will implement biometric enrollment and OWL-based policies.
SecureNano API: A Framework to Secure Nanobot Applications
Whitney Nelson and Chutima Boonthum-Denecke
Hampton University

Abstract: Nanorobotics is an upcoming technology used across a vast spectrum of fields, such as healthcare, engineering, and military. It has recently accelerated in technology because of its ability to solve enormous problems with devices designed in nanometers. Nanorobots will be able to reach places, fix the tiniest problems, and affect different attributes that were once unimaginable just ten years ago. As the phenomenon grows in capabilities, security will be an essential aspect to consider. The potential threat of accounts, private information, and government files being leaked or hacked stresses the importance of thinking ahead and learning how to implement the best security practices before they become a threat. This research project focuses on delivering Nanorobotic applications with the highest potential of security. This is done by creating a security the SecureNano API that will provide a series of checks and testing within any Nano related application. In respect to the definition of “Nano” the API will mimic this within its functionality, having the ability to check the smallest errors and remediate them. Secure nanorobotic API’s provide a) a framework for developers that assist in making the best security practices and b) a standard set of secure nano protocols c) include intrusion detection testing to prevent hacking into the system and d) a log of user access and process of information.

The Traceability of Bitcoins
Marjani Peterson and Jean Muhammad
Hampton University

Abstract: Bitcoin is an innovative payment network and a new kind of money. The source of its growth can be mainly attributed to its unique privacy properties. The problem is people don’t know the technology used and the mechanisms used to protect personal information during transactions. This study aims to analyze the bitcoin block chain to prove that anonymity is not guaranteed. It includes information acquired from several resources on the inside and outside looking into the world of Bitcoin and online peer-to-peer (P2P) methods of payment. It also includes interviews from experts in the field of Bitcoin and a survey completed by everyday users of online currency

Psychological Reasoning Behind User Password Compositions and Behaviors, and the Associated Cybersecurity Risks
Zhanel Tucker and Jean Muhammad
Hampton University

Abstract: This paper discusses the psychological reasonings behind user password composition and behaviors, and the associated cybersecurity risks. Passwords are usually the first defense of any software, application, or device. Users should be properly protecting their data and devices, but are using weak password composition principles or ignoring cybersecurity guidelines. This could be because of lack of knowledge of security practices or the conscience decision of ignoring security practices for practicality. This study will review interviews from cybersecurity professionals, user survey on password composition choices and cybersecurity, allowing an analysis of behaviors to bring awareness to emphasize the importance of secure passwords and computing behaviors.
Bedside Manner Experience Development

Arian Williams and Jakita Thomas  
Mississippi Valley State University

Abstract: Bedside manner has received little in-depth evaluation in the literature, especially from an advanced nursing practice perspective. Concept analysis revealed specific provider behaviors that are consistently deemed positive or negative by patients. Positive behaviors include displays of respect, courtesy, and listening. Negative behaviors include arrogance, indifference, and disrespect. The patient's perception of provider bedside manner impacts health status, satisfaction, and compliance. Effective bedside manner by Advanced Practice Nurses (APN) is essential for effective patient care as APNs increase as primary care providers. Further research in the area of bedside manner is needed to provide additional clarification of patient expectations and desires from their relationship with the clinician.

Project Ballot Creator

Koran Wright, Simone Smarr and Juan Gilbert  
Mississippi Valley State University

Abstract: Creating a ballot is what users do to prepare for voting. Before people can vote a ballot must be created. Prime III, a voting software, needs certain information from a ballot for the software to work properly. Prime III is a developing third generation voting software, and ballots will be needed for the software. How can we get the information from users easy and quick as possible?
Social Media Contest Rules

ADMI 2018 is on Twitter!!
#ADMIUSA

Follow ADMI on Twitter and win some great prizes!! Different criteria for each day can be found below so join in and tweet your fellow students about the sessions you are attending! Winners will be announced each day during lunch and prizes will be awarded on Saturday during the Awards Banquet.

Criteria of Each Days Giveaway

Friday (lunch) - Most tweets that Day (using the hashtag)

Saturday (lunch) - Capture your “Favorite Event” of the day and tweet why it was your favorite. One winner will be selected at random from the tweets we receive.

Saturday (dinner) - Tweet of a picture of your favorite poster and a short note of what you liked about it or what you learned. A winner will be chosen at random from the tweets we receive.

ONLY ONE PRIZE PER PERSON!!

*If students have questions about the contest throughout the week, they can follow the twitter account as well as use the #ADMIUSA.
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<tr>
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[ADMI President]  
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Winston Salem State University  
calwelle@wssu.edu | **Linda Hayden**  
[ADMI Vice-president for Programs]  
Math & Computer Science Department  
Elizabeth City State University  
HAYDENL@mindspring.com |
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Department of Computer Science  
Norfolk State University  
thumphries@nsu.edu |
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[ADMI Treasurer]  
Department of Computer Science  
Spelman College  
Lawrence@spelman.edu | **Elva Jones**  
Computer Science Department  
Winston Salem State University  
jonese@wssu.edu |
| **Jean Muhammad**  
Department of Computer Science  
Hampton University  
jeana.muhammad@hamptonu.edu | **John Trimble (Ex-Officio)**  
Department of Computer Science  
Howard University  
trimble@scs.howard.edu |
| **Chutima Boonthum-Denecke**  
Department of Computer Science  
Hampton University  
chutma.boonthum@gmail.com | **Robert A. Willis Jr.**  
[Ex-Officio ADMI President]  
Department of Computer Science  
Hampton University  
robert.willis@cox.net |
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Department of Mathematics/Computer Science  
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| **Jacqueline Jackson**  
Department of Computer Science  
Jackson State University  
Jacqueline.m.jackson@jsums.edu |
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