SUMMER INTERN PRESENTATION SHOWCASE

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SUMMER INTERNS PRESENTATION SHOWCASE 2017

Sponsored by:

AFCEA
Central Maryland
<table>
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<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>12:00 - 1:00</td>
<td>Demo Set-Up Time</td>
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<tr>
<td>1:00 - 1:15</td>
<td>Check-In &amp; Welcome</td>
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<tr>
<td>1:15 - 3:00</td>
<td>Presentations Part I</td>
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<tr>
<td></td>
<td>(Teams 1 - 6)</td>
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<tr>
<td>3:00 - 3:10</td>
<td>Break</td>
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<td>3:10 - 4:20</td>
<td>Presentations Part II</td>
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<td>(Teams 7 - 11)</td>
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<td>4:20 - 5:00</td>
<td>Refreshments &amp; Judges Deliberation</td>
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<tr>
<td>5:00 - 5:15</td>
<td>Awards Ceremony</td>
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<td>5:15 - 6:15</td>
<td>Demonstration Showcase</td>
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**JUDGES**

**Presentation:**
Mr. Brian Cooper, BrainTrust  
Mr. Gary Daigle, iNovex Corporation  
Ms. Katie Selbe, Northrop Grumman Corporation

**Technical:**
Mr. Rob Suggs, DCCA  
Ms. Emily Duan, AFCEA Scholarship Recipient  
Dr. Margaret Wood, Wood Consulting, Inc.

**SIPS FACILITATORS**

- Gary Rosen, President, Engineering Solutions, Inc.  
- Jessica Morgenstern, AFCEA CMD VP Education
WHY?

As part of AFCEA Central Maryland's goal to educate and inspire the next generation of technical professionals, in 2017, we started the Summer Internship Presentation Showcase (SIPS). SIPS is an opportunity for summer interns from participating companies in the Central Maryland area to practice their presentation skills and demonstrate their technical prowess. It is our goal that as the summer intern programs share their achievements with others in the community, they also will be sharing and building their passion and excitement for technology.

Interns from companies of all sizes are welcome to participate. The showcase gives interns the opportunity to present their summer projects in front of a diverse audience. Each presenter/team received professional presentation coaching, prior to the showcase. Following the formal presentations, there will be time allotted for interns to discuss and demonstrate, as appropriate, their projects in a science fair-like atmosphere.

Outcome: Two cash prizes – Best Presentation and Best Technical Project – to be used as scholarship money towards college expenses.

🌟🌟 Each prize - $1,000.00. 🌟🌟
Visionist is a leader in Computer Network Operations and Exploitation. Each day our analysts and developers target adversary computer networks to answer our nation’s toughest foreign intelligence questions. Given this, Visionist has made it a priority to develop new analytic capabilities to assist cyber operators with these tasks.

In an effort to continue growing this capability, our team developed a network characterizer. This character is capable of ingesting standardized network log data (BitBucket, Windows Log, WiFi, etc) and uses analytic techniques to identify user groups in new or large-scale networks. Analysts can utilize built-in functionality, provided via k-means clustering, to quickly classify users by a variety of characteristics such as project, time, network usage, and other variables of interest. Summary descriptions are generated for both individual users as well as the cluster to which a user belongs.

Additionally, the characterizer allows the analyst to filter through all aspects of the network data in its original, raw format. An export feature allows the analyst to extract specific users, or groups of users, for further evaluation in an external environment. This functionality will prove invaluable to our operators and will be used to enhance many existing network tools and evaluation methods.
By: Ayal Ciobotaru  
Sponsor: Next Century

WISER (Wireless Information System for Emergency Responders) is a system designed to assist emergency responders in hazardous material incidents. Developed by the National Library of Medicine, WISER provides a wide range of information on hazardous substances, including substance identification support, physical characteristics, human health information, and containment and suppression guidance.

By: Sam Reynolds & Eric Solender  
Sponsor: MasterPeace

Eric and Sam have been fully integrated into the project team for MasterPeace’s commercial start-up spinout company Zuul Iot Inc. Zuul’s patent pending solution allows companies to deploy, discover, and manage the ever growing number of IoT devices in their networks in an efficient, scalable and SECURED way. The intern’s have been part of the core development activities and associated DevOps environment. They are getting hands on experience working on a commercial start-up as part of a larger program team. They are also getting personalized mentoring from the Zuul engineering leaders. Technologies included in the project run the range of embedded Windows/Linux IoT device SW, router firmware, Andriod app development, and GO cloud services hosted in Docker containers and deployed on AWS. They are also learning agile development using ZenHub and Github, with Jenkins, and cutting edge DevOps concepts like applying the ELK stack to analyze and debug cloud deployed Docker containers.
Modular Filtration, involves containerizing data filters that process sensitive data for Cross-Domain Solutions (CDS). The purpose of Modular Filtration is to decouple Guard certification from the Filter certifications, which will vastly reduce the time and expense required to field new filter components. The goal of Anna's intern project is to develop a container application that demonstrates filter data flow that is loosely coupled to a modular guard architecture.

ALEXA SENSE

By: Michael Chirico, Jake Gluck & Colin Mason
Sponsor: Engineering Solutions, Inc.

Imagine entering your office in the morning and having Alexa tell you what’s on your calendar for the day, how many messages you have waiting for you, etc. Assuming deployment within an office environment, it could also tell you when somebody else arrived at their office, but only tell you when it senses you are there to hear it. It could also relay messages within the office purely via voice (e.g., “Alexa please tell Alice to come in and see me”). Perhaps in some not-to-distant future, it could act as a receptionist, responding to people when they arrive. There are many possibilities.
The mission of the internship is to discover security flaws in individuals throughout the company through the use of phishing and report on company-wide security vulnerability. The interns aim to produce an in-depth investigation of the security practices demonstrated by each employee of the company. The team will also demo findings from additional projects including honeypots, Kali Linux, and WiFi spoofing.
Imagine you leave work and during the ride home you realize that you forgot to submit your work hours. You open up your company timesheet on your cell phone, and logging hours is almost impossible because of a UI that was not designed for a mobile device. This was a reality for CollabraSpace employees until recently. With everyone today using mobile devices, it was time to redesign our timesheet with a mobile user interface in mind.

The goal of the ‘All Access Time Card’ project was to create a universal web application that would allow employees to access the company timekeeping system from all platforms, including mobile devices. The application will allow user to log hours, edit and submit timesheets, view pay period metrics, and view company calendars and events. Technologies such as Sencha cmd, ExtJS, and Maven were used to design and build the front-end application while Spring and Swagger.io were used for back-end development.

MEMEX seeks to develop software that advances online search capabilities far beyond the current state of the art. The goal is to invent better methods for interacting with and sharing information, so users can quickly and thoroughly organize and search subsets of information relevant to their individual interests. The technologies developed in the program would provide the mechanisms for improved content discovery, information extraction, information retrieval, user collaboration, and other key search functions. The original intent of the search capacity was to be able to scrape the dark web and then visualize the results in domain-specific applications. The most successful of these applications works to combat human trafficking, and trial users of this system have already convicted at least one California man for his involving of teens in the sex trade.
The ClearEdge Cloud Environment IRAD effort is a modernization and reorganization of ClearEdge’s on site cloud computing resources. This IRAD effort aims to upgrade our on-site cloud with the latest technologies and industry best practices. This effort is upgrading the both development and production clusters with high performance computing capabilities focusing on high-end compute, advanced networking, object & block storage, batch & streaming processing, machine learning frameworks, GPU-acceleration, virtualization, and containerization. Additionally, this effort also researches, obtains, grooms, prepares, and stages data sets onto the clusters that are representative of our customer data sets (including ongoing streaming data acquisition).

During the Altamira (formerly Prime Solutions) 5th Annual Summer Internship program, the development team - solely-composed of interns - prototyped a cutting-edge defensive Computer Network Operations (CNO) tool for their Advanced Persistent Threat (APT) Simulator product offering. Geared towards commercial entities within the health care, financial, and personal data markets, it provides clients with a unique opportunity to test their Network Operations Center (NOC) responses, boundary detection systems, and host-based thread analytics against simulated malicious actors. The simulation provides several dials to enable clients to tailor the simulation to their concerns of data-loss, confidentiality, reliability, and integrity of critical business systems against a malicious actors ability to operate undetected within their network.
INTERNS
Connor DuBois
Connor is a Software Engineer Intern at CollabraSpace. This Summer’s internship project focuses on the CollabraSpace ‘All Access Time Card’ where he is using technologies such as Sencha cmd, Ext JS, spring, swagger.io, and maven to build a universal time card application allowing employees to access the company timekeeping system from all platforms including mobile devices. Previously, Connor interned as a Software Intern at Ferguson Enterprises developing an internal website for the DC Metro businesses using SharePoint, html, css, and js.

As a rising senior at the Florida Institute of Technology, Connor studies software engineering and plays NCAA lacrosse as a full time student-athlete. Connor currently lives in Kent Island, MD, but considers Ellicott City, MD his hometown. When not at school or at work, Connor spends his time playing golf, paddle boarding, and crabbing on the eastern shore.

McKenna Thomas-Franz
McKenna is an Intern at ClearEdge IT Solutions currently supporting the company’s research and development initiatives. For the previous two summers, McKenna has held internships at the National Security Agency, assisting the missions of several organizations. McKenna is a rising junior at Bowdoin College pursuing a degree in neuroscience. She intends to apply her degree, as well as her computer science coursework, to a career in data science or applied neuroscience research.

Zachariah Dzielinski
Zachariah Dzielinski is a senior majoring in Information Systems at the University of Maryland, Baltimore County. Zach is an avid Linux user, proponent of Open Source software, and excited about IT enough to spend his time and money on a home-lab. Since his employment as a DevOps Engineer at ClearEdge IT Solutions, Zach has been involved in various Internal Research and Development projects that consist of things such as Linux Systems Administration, Networking, Configuration Management, Scripting / Programming, as well as other general IT work. Aside from his current work, Zach also has experience with Website Design and Development. He has worked in the past as a PHP DevOps Engineer for a startup in Baltimore City, as well as a Website Developer and Systems Administrator for UMBC.
Adam Howard
Currently a senior at Calvert Hall College High School, Adam is a Jack-of-all-trades. He is skilled in C++, C#, Java and a variety of other languages. He also created his own website, adamhoward.org, where he demonstrates the four different pieces of software he has released over the past three years. He even created his own Chrome application that currently has over 45,000 users! Adam also enjoys running and is currently on the track and cross country teams at his high school.

Colin Mason
Colin attends the University of Maryland College Park and is close to finishing a Bachelors in Computer Science. Colin, AKA “Turtle”, enjoys spending time with his friends. Whether it’s going out in D.C. or staying home and watching movies, he’s always up for anything. He also enjoys playing and watching all sports in his free time, but his favorite sport is soccer. His favorite team is Arsenal and he actually visited their stadium while he was in Europe for his last spring break (Go Gunners!).

Jake Gluck
Jake is studying for a Bachelors in Computer Science at the University of Maryland, College Park. He works as a Resident Assistant and has an improv show at UMD’s radio station WMUC. Jake is also active at school in a comedy group, club ultimate Frisbee, and a satirical news publication.

Michael Chirico
Michael attends the University of Maryland, College Park and is pursuing a Bachelor’s degree in Computer Science with a minor in Astronomy. In his free time, Michael volunteers at an animal shelter and enjoys exploring the DC area. He also likes hiking, reading comics, and has a tendency to binge-watch new Netflix series as soon as they’re released. Originally from northern New Jersey, Michael is slowly becoming accustomed to Maryland life, but refuses to ever give up his support for the New York Giants and New York Yankees.

Adam Howard
Currently a senior at Calvert Hall College High School, Adam is a Jack-of-all-trades. He is skilled in C++, C#, Java and a variety of other languages. He also created his own website, adamhoward.org, where he demonstrates the four different pieces of software he has released over the past three years. He even created his own Chrome application that currently has over 45,000 users! Adam also enjoys running and is currently on the track and cross country teams at his high school.
Jack Iler
Jack joined the team after graduating from Calvert Hall College High School and accepting an offer to The University of Maryland, College Park, class of 2021. Jack plans to study computer science with a dual degree in finance and has been accepted to the Robert H. Smith School of Business. During his free time, Jack enjoys keeping up with current events to predict rises of falls of stock prices. He also collects vinyl records and plans to take them with him to college.

Jared Cirulli
Jared joined the intern team after completing his sophomore year at The University of Maryland, College Park. There he studies computer engineering and is a member of the Engineers Without Borders where engineering students come together to improve the quality of life for disadvantaged communities across the globe through the use of environmentally sustainable projects. When Jared isn’t saving the world, he enjoys playing lacrosse, fishing, and spending time on the golf course. As far as programming goes, his specialty is Java but he is very open to learning new languages.

Kate Tennant
Kate has gladly accepted the role of intern lead for this summer and has spent three summers with Jovian as an intern. She currently attends The University of Maryland, Baltimore County, where she studies chemical engineering and is a member of AIChE. For fun, she enjoys making and selling ceramics, long boarding, and going to Orioles’ games.

Carson Wood
Carson is a rising senior Computer Science major and GIS minor from Shippensburg University. He is primarily interested in geospatial software development and web development (front and back end). He has worked on a variety of side projects from web mapping applications to Android applications. He has also participated in multiple hackathons in teams at local colleges and won prizes, he plans to attend more this coming year. During the school work, Carson is pursuing a capstone research project on shortest route algorithms such as A* search and Dijkstra’s. He currently works at Leidos as a Software Engineer Intern on a geospatial machine learning project.
Molly Flowers
Molly is a student at Washington College. She is a double major in physics and mathematics expected to graduation in 2019. She is interested in going into the biomedical field particularly in bioinstrumentation or biomechanics. During the school year, she works at Washington College’s Geographic Information Systems Lab where she does front end web development and GIS reports. She is currently working as a Software Engineering Intern on a geospatial machine learning project at Leidos.

Eric Solender
Eric is a rising sophomore at UMBC where he is on track for degree in Computer Science with a minor in mathematics. He was raised in Frederick, Maryland. This is Eric’s second year as an intern at Master-Peace Solutions, Ltd and he has also formerly interned with Circleback, Inc. Eric is a big hockey fan and Buffalo Sabres fan. In high school Eric designed a video game to detect brain injuries using Microsoft Kinect and is currently working on an IoT laser tag game that can be used from a phone.

Sam Reynolds
Sam, a native of Frederick, Maryland is a summer intern at Master-Peace Solutions, Ltd in Columbia. He graduated from Frederick Community College in 2016 with an Associates Degree in Computer Science. He is a rising Senior at UMBC where he is pursuing his Bachelors in Computer Science. Sam enjoys to build desktop computers, play basketball, and play Rocket League in his free time. Sam also enjoys attending Hackathons and collaborating with his classmates on new project ideas.
Anna Blendermann
Anna is a senior at the University of Maryland, College Park majoring in Computer Science and Business through the Hillman Entrepreneurs Program. She earned an A.A. in Computer Science from Montgomery College before transferring to Univ of MD, and hopes to pursue a graduate degree in Software or Computer Engineering upon graduation. Her interests include working with Kubernetes, the Open Container Initiative (OCI) and AI projects.

Ayal Ciobotaru
Ayal graduated in May from Stevens Institute of Technology with a Bachelor of Engineering in Electrical Engineering and a minor in Computer Science. While at Stevens he was a part of the National Champions men’s varsity volleyball team, he was also a house manager and social chair in Sigma Phi Epsilon Fraternity. He has worked at Enhatch as a sales development representative/developer. While there he scripted multiple python programs to automate demonstrations of app analytics for customer retention. He also led online demonstrations of the mobile sales platform to entice potential clients. Ayal is currently interning on the WISER project at Next Century.

Kyle Liu
Kyle is currently a student at University of Maryland and expects to graduate May 2020 with a Bachelor’s Degree in Computer Science. He has worked at Dell Corporation as a software engineer intern. While there he taught other interns hashing techniques and data structures as well as optimized C application on the system level to prevent stack overflow and network security attacks. As a personal project Kyle has worked on Activity Buddy, a P2P android messaging app for athletes that matches users based on availability, location, and their skill level. Kyle is working directly on the MEMEX project at Next Century.
Emily Yu
Emily is a Junior Studying Computer Science at the University of Maryland Baltimore County with a Creating Writing Minor. Emily was a UMBC Center for Women in Technology (CWIT) scholar, and she is a member of the UMBC Honors College. Emily has experience performing Python unit testing on parts of the new GSA Advantage Formatted Product Tool baseline through Lockheed Martin. A Dean’s List student, she was a Maryland & Delaware Competition Winner in 2015 of the National Center for Women in Technology (NCWIT) Award for Aspirations in Computing, and a National Level Award

Eole Lake
Eole is a Senior Studying Computer Science at the University of Maryland College Park with a Mathematics Minor. Eole has experience with Buffer Exploits and generating programs that recognize buffer overflow in C. He also engineered secure, multi-threaded ATM software that ensures protection against exploits while handling multiple users.

Ian Robinson
Ian is a Senior Studying Computer Science at the University of Maryland College Park. He earned his Associate’s Degree in General Education in 2014, graduating with a GPA of 3.4. Ian was previously an intern with Under Armour where he analyzed networks, systems, and endpoint logs to identify malicious network traffic and presented information with Splunk. Ian has previous experience teaching elementary aged students electronics and computer skills.

Leonardo Santos
Leonardo is a Senior Studying Computer Science with a double major in Criminology and Criminal Justice at the University of Maryland College Park. A graduate of George Washington Carver Center for Arts and Technology in Towson, MD. Leonardo was previously an intern with MITRE Corporation where he researched topics related to digital signatures, including Bitcoin operations, DNS protocol, and Dark Web. Leonardo actively supports several community service activities and is a member of the Filipino Student Association.
Navreet Bajwa
Navreet is a Junior Studying Computer Science and CyberSecurity at the University of Maryland College Park. Navreet participated in Pearl Hacks, an All-women hackathon held at the University of North Carolina this past winter. She worked with Android Studio and developed an app for an electronic car manual and basic car repair. She also participated in the Technica Hackathon in the fall of 2016. Technica is an All-women Hackathon held at College Park and involved use of Android Applications and Virtual Reality. Navreet is active in her community and supports the Association for Women in Computing, Sikh Student Association, and she is a member of the Primanum Honor Society.

Caroline Kery
Caroline attends the University of Maryland, Baltimore County and is working towards a Bachelors and Masters in Computer Science and a Bachelors in Mathematics. In her free time, Caroline likes to get lost while jogging and watch pointless videos on YouTube. She also enjoys volunteering, and getting lost while driving. Caroline is a very intense person, and may take things way too seriously.

Collin Clark
Collin attends University of Delaware and is working towards Bachelor degrees in Computer Engineering and Computer Science. In his free time, Collin works for a research group specializing in parallel programming models and GPU computing. He has achieved A2 fluency in German, and is continuing to learn the language over the summer. Collin really enjoys traveling, but also sitting at home and playing video games. He is learning how to cook out of necessity.

David Phillips
David attends University of Maryland, Baltimore County and is working towards a Bachelor’s in Computer Engineering. In his free time, David enjoys playing a variety of sports, his favorites being basketball and football. David also enjoys attending a variety of concerts and other music events. His hobbies include hiking, skateboarding, and beekeeping (yes, you read that right). David also prides himself in being the named the King of microwaving food by his peers.
AFCEA Central Maryland would like to thank the following companies who participated in this inaugural event: