

Ke'Darius Whitley

PEARC17 Conference Report

July 14, 2017

PEARC17 Conference

Sunday, July 9th I departed from Norfolk International Airport, flying on a plane was an amazing experience for me. It was my first time flying on a plane so I was excited to have the opportunity to experience it. We flew on the Delta airline, the flight was smooth and I enjoyed the just being in the air, and seeing the clouds and viewing what landmarks look like from the air. I arrived at the Hyatt Regency in New Orleans, LA around 3:30 pm for the PEARC17 conference. PEARC stands for: Practice & Experience in Advanced Research Computing. This year's conference theme was "Sustainability, Success and Impact", it reflects key objectives for those who manage, develop, and use advanced research computing throughout the nation and the world: sustainability of the infrastructure environment; measuring and ensuring success for organizations that provide and use advanced research computing; and impact of the technologies on the workforce and on science and scholarship. The theme is also relevant as we inaugurate the PEARC conference series and strive to create a self-sustaining event with continued impact.

Towards the afternoon that day at the conference, we attended the "Student Welcome Event" in the imperial hall. At the student welcome event the PEARC staff introduced themselves, we played games, and they provided us with food as well. The staff names were Ester Soriano, Alana Romanella, and Melissa Abekbak My favorite part of the welcome event was when the New Orleans FBI: Cyber Intrusion Squad came to inform us about different cyber events that can occur at any time if we are not aware. The two representative names were Tracy Smith & Tray Lin. However, they informed us about the *six different cyber fractures*, and *common tools hackers use*. The *six cyber fractures are*: hacktivism, crime, insider, espionage, terrorism. The *common tools hackers used are*: social engineering, phishing, cyber extortion(ransomware), man-in-the-middle, hardware vulnerabilities, and evil twin. Lastly, the Cyber Intrusion Squad informed us about internship opportunities with the FBI, they explained to us the different requirements and where to apply as well.

Monday, July 10, 2017, I had the opportunity to learned some basic Python concepts from Steve a representative from Cornell University. The tutorial was "Introduction to Python". Python is a high-level general-purpose programming language, the program is used by thousands of people to do things from testing microchips at Intel, to powering Instagram, to building video games with the PyGame library. Within this tutorial we learn the basic concepts of python such as: strings, files, list, conditions, iterative, etc. For example, within this session Steve went over expression with rational operators, when going over this topic he posed the question "What will happen when you try $5 > 2$ " then we had to print out the answer using the "print" function to display the answer to the question. Next, we cover the different loops such as for loop, while

loop, and nested loop. Steve continued to teach us many different skills. He informed us about the terminal “Anaconda”, other knew about but I didn’t so it was something new I learned about. *Anaconda* is a freemium open source distribution of the Python and R programming languages for large scale data processing. That was my favorite part of the tutorial because that was a tool that I wasn’t introduced to until that day.

Throughout the day I had the opportunity to volunteer at the Jetstream: A national research and education cloud, the tutorial was taught by Jeremy Fischer a representative of the company. Jetstream is the first NSF’s production cloud facility and its part of the NSF aXtreme Digital (XD) program. Jetstream provides on-demand interactive computing and analysis, while it also enables configurable environments and programmable cyberinfrastructure. Jetstream is focus on easy use and broad accessibility, also the user can use command lines to access for those who want to use it or the user could use GUI access for those who don’t. Jetstream will support persistent gateways such as: SEAGrid, Galaxy, GenApp, NAMDRunner, CIPRES and others. With Jetstream, the goal is to share VMs and then store them, to publish via IU scholar works. Jetstream has three main Cyberinfrastructures and they are: IU, TACC, and U of Arizona, between these 3 they either us internet2 or XSEDE cloud. Lastly, at the Jetstream tutorial they stated a quote by Mike Lowe (Jetstream architect) it stated, “Cows, not pets: pets take great amount of care, feeding and you name them; cows you intend to have high turnover and you give them numbers.”.

In addition, later that day around 6:00 pm, I attended the Student – Mentor Dinner in the block restaurant. At the dinner, I had the opportunity to meet Dr. Rachel Vincent-Finley Associate Dean for Academic Affairs at Southern University in Baton Rouge, LA. Dr. Vincent-Finley has her doctorate in Computational and Applied Mathematics from Rice University and completed a post – doctoral appointment in the Institute of Molecular Design at the University of Houston. Dr. Finley begin her career at Southern in 2009, she was an assistant professor in mathematics. Around 2012 – 2013 academic school year she engaged in research that supported the development and sustainability of her research at Southern. Her general research included numerical methods and mathematics modeling with research applications to molecular biophysics and material science. Dr. Finley and I had a good engaging conversation about many different topics, she broke down many different concepts to about how to apply mathematics towards my degree in computer science. PEARC17 did a great job pairing me up with Dr. Finley the hour I spent with her I learned so much and was very motived to continue my education to achieve all opportunities that are sent my way. Also, while at the student – mentor dinner I had the opportunity to a guy name Anthony R Howard book publisher who informed me about his company it caught my attention because it was similar to what I want to do in my future. To end the dinner, I received business cards from both Dr. Finley and Mr. Howard along with other people from different companies.

Tuesday, July 11, 2017 I attending the Student Modeling Day event that was located in the imperial 5b hall. Modeling day was an event where students has the opportunity to work in

teams to understand an underlying model and its behavior, simulate a range of conditions. Students had to write and test the computer codes (using Python programming language) that are needed to solve real world problems, improve the user interface to the code, and validate code against real data or more sophisticated models. At modeling day, I was teamed with Ebrahim Alareqi, George Kurian, Derek Morris Jr, Kartavis Phillips, and Reggie Kelly. The project we chose was *Felix Baumgartner Parachute Project*, the focus of our modeling was the fall of the skydiver Felix Baumgartner and his famous “Stratos” jump in 2012. We plotted his position and velocity in freefall and after he opened his parachute. We started off with a simple model of a ball being tossed into the air and falling back to earth as it has some of the basic components need to model any falling object. Overall the modeling project was a success, I was working with some good people who helped me understand concepts I didn’t know that well. Later throughout the week we presented our modeling and it went well, I connected with some a good hardworking group of guys.

Overall, the PEARC17 conference in New Orleans, LA was an amazing experience and I am grateful I had the opportunity to experience it. The conference provided me with opportunities to connect and social with a diverse good of students from all over the world, and with different professors, advisors, business owners etc. They feed us great and made sure we had everything we needed to have a successful encounter when networking or volunteering. The city of New Orleans is beautiful and was everything I dreamed it to be, there were so many beautiful land marks, great places to eat and social, and at night when lights were on is just a sight to see as well. I thank Dr. Linda Hayden for this amazing experience, the conference was a success, the flight accommodations, etc... Everything was well planned out and smooth, I’m grateful to me a woman of her character.

