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PEARC17 Conference

Attending the PEARC17 Conference was in fact my first conference that I have ever been to. I was not sure about what to expect once I had arrived there. Everything was a first for me as I was gaining my experience. Getting on a plane by myself and undergoing very high altitudes was something I had never done before in my life. Sunday July 9th, 2017, we arrived just in time at the Louis Armstrong New Orleans International Airport before the storm had begun. The thunder and lightning ended up shutting down the power system in the whole airport. We ended up waiting about half an hour for the power to regenerate and to claim our luggage as well. As we overcame through that obstacle, we took the airport shuttle bus where we had finally arrived at the Hyatt Regency Hotel where the PEARC17 Conference was being held at around 3:30pm. As we all got situated in our rooms, we all attended the Student Welcome Reception at 4:30pm.

There were a few presenters at the dinner who were getting all the students caught up and prepared for the next couple of days and ready for the PEARC17 Conference. One of the presenters was Ester Soriano. To get us situated during the reception, she started off with multiple trivia questions to get the students comfortable and involved. I connected a little bit more with her because I had found out that she was Hispanic and was from Madrid, Spain. It was very nice to have someone there that also spoke Spanish as well. Another presenter who was also running the student program was Melissa Romanus. She was in charge of making sure that all the students there were getting to the right place for their tutorials and making sure that the students who were volunteering knew where they had to be. We also had a police officer named Chief Scott who understood that we were in a venue where it is one of the top crime rates in the country just because a lot of tourists come to view the city. Chief Scott's main goal was to make sure that we were aware of our surroundings and to always use the buddy system. The buddy system was a way to make sure someone else knew where you were going if you were going somewhere alone.

We also had two FBI Special Agents named Tracey Lin and Tracie Smith from the FBI Cyber Squad in New Orleans. Both Tracey Lin and Tracie Smith discussed the structure of the FBI Cyber Division/Program, the various types of hackers/computer criminals. They also went over the current cyber threats including ransomware and phishing attacks. Ransomware, also known as Cyber Extortion, is a type of crime or attack coupled with a demand for large amount of money to avert the attack. As for the phishing attack, Special Agent Tracie Smith explained that phishing is a way for hackers to send emails that replicate the looks of an actual company's web page and have you insert your personal information that can involve passwords and credit card numbers or anything else in that nature. The Anatomy of a Hack involves doing some recon, initializing the compromise, establishing a foothold, escalating the privileges, internal recon, moving laterally, expanding the presence, exfiltrate data, and maintain their presence. As they concluded with their presentation, they also talked about ways to protect ourselves with passwords and not clicking on links that looks suspicious from someone that you do not recognized at all.

On Monday July 10, 2017, we attended the Python programming language tutorial early in the morning which started at 9am and finished at 12pm. The course was being held by Ohio

Supercomputer Center, Kate Cahill, Texas Advanced Computing Center, Antonio Gomez Iglesias, and Cornell University CAC, Steve Lantz. We were running our program tutorial through SPYDER which is an acronym that stands for Scientific PYthon Development EnviRonment. They went over the basics such as learning how to print with both single and double quotes. Most of what they were going over through in the tutorial I could comprehend and follow through very easily. Steve Lantz did introduce something new that I have not seen or used before and it was something that we were getting prepared to use in the Student Modeling Day on Tuesday. He showed us how to do basic plotting and how to customize our plots. As the day went on, it was time for me to do my volunteer shift at the tutorial for Using R and RStudio on Jetstream. My job as a volunteer was to arrive about ten minutes earlier before the tutorial had begun and be prepared to hand out survey questionnaires and made sure that everyone had signed in. There were two speakers involved in this tutorial and they were Tassie Gniady and Jeremy Fischer. During my volunteer shift, Jeremy Fischer was just talking to the attendees about what the tutorial will be about and making sure that they understood what was going on in the process for setting up the program on their laptops. He displayed a quote by Mike Lowe, a Jetstream architect, that said, "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". It had something to do with the analogy of using virtual machines on Jetstream but they did not dive into that until after my shift had finished. The person that was going over the programming and learning how to use Jetstream was going to be Tassie Gniady.

Later, that night, we attended the student mentor dinner where I met my mentor named Florence Hudson. She is the Senior Vice President and Chief Innovation Officer at Internet2 who are being supported by the National Science Foundation, also better known as NSF. Florence has also worked for IBM and NASA at one point in her career before she landed at Internet2. I found it very interesting that we got set up with mentors that are were perfect for us. I noticed that each individual mentor had a background that drew our attention. My mentor mentioned Cyber Security and I was in shock because that was the type of field that I was interested from the beginning of my college career and would like to pursue that in the future.

The next morning on July 11, 2017, I was part of the Student Modeling Day where we had been set up into multiple groups to work on different programs. My group decided to work on a Zombie program. We had to figure out ways to make the program more interactive and use the plotting techniques that we had just learned the previous day in the Python Tutorial. We had to figure out how we could create a safe zone to the people that were not infected by the zombies so that when they get to a certain location, they would be safe and not be harmed from the zombies that were still alive. Another way that we made the program more interactive was by being able to write a code where if any zombies ran into each other, they would group together and chase the people around. Working on this project was a little different than what other groups were working on but it was the one that drew our interest to work on something different.

On Wednesday July 12, 2017, I went to the Exhibitor Forum presentation to see all the companies that were there. There was one company that intrigued me the most and it was one of the sponsors there at PEARC17. It was the company called NVIDIA. What caught my eye was that they had some sort of robot on their table and as I got closer to check it out, it was in fact a machine with a tiny camera in the front capturing images and determining what they are. The basis of their company was about machine learning. Senior Account Manager and Higher Education Research Universities, Jon Saposhnik and Program Manager, GPU Education Outreach and NVIDIA Academic Programs, Joseph Bungo where discussing to us how the GPU

graphics card was working and what types of career fields uses machine learning. They mentioned to us that even in the medical field they use machine learning to detect illness such as cancer and things of that nature. I was not understanding what they meant about being able to detect cancer. They explained that they can use the picture of what at one point doctors did not know what the beginning stage of cancer looked like and can label it as the start of it. Once they use it on another patient, they can do a test and if it detects a familiar photo for cancer, it will let the doctors know that they are at a certain stage of cancer. Jon Saposhnik mentioned to me that it can also be used in Cyber Security to detect patterns if someone is being hacked or things of that nature. Seeing how they used machine learning was something that got me excited to learn more about. After speaking with them, we went on to have lunch with our mentor one last time. The next morning on Thursday July 13, 2017, we attended the Student Modeling Day Presentations to present our group projects and discuss to everyone what we had accomplished in this zombie project.

My experience at PEARC17 was an experience I will never forget. This being my first conference that I have ever attended was good because I got to see multiple companies all in the same venue. I got the chance to meet new people and see how they worked to solve certain problems and understand the why they took that route instead of another and just seeing how they think was amazing to see. If I get the chance to attend another conference, I would make the time to be able to attend it.