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4-Week Summer Coding Institute

## PEARC18 Travel Report

As an intern in the SGCI 4-week summer coding institute, I was required to go to the PEARC18 Conference in Pittsburgh, Pennsylvania. PEARC18 is an acronym for Practice and Experience in Advanced Research Computing 2018. The Conference started July 22 and ended on July 28, 2018. The conference included special events, tutorials, technical papers and student technical papers, plenary, workshops, panels, and birds of feathers.

Leaving from Elizabeth City, NC to Pittsburgh, PA for PEARC18 took us about 10 hours. We left at 5am and arrived at the hotel right before the first student session on Sunday. The session started at 4:30 and ended at 8:30. This session was an introduction for the students that will be participating in PEARC18. In this session students were given their volunteer roles and schedules for the PEARC18 conference. The session had a lot of students from other institutions around the country. Some of the students in the session were graduate students. The session included speakers that spoke about their jobs. One of the speakers worked at the FBI. She gave us her background of how she got the job and the requirements she needed for the job. She also gave us information on FBI internships for students if interested. The next speaker spoke about being S.T.E.M. and working on artificial intelligence. After the session, a couple interns and I went out to downtown Pittsburgh to search of dinner.

On Monday, I went to the PEARC18 breakfast, where they served us bacon, egg, and cheese wraps with fruit. After breakfast I had to volunteer at the first session of the day. This session was called the "Introduction to Python 3 and Jupyter Notebooks." The session went from 8:30am through 12:00pm. This session was one of the tutorials at the PEARC18 conference and even though I was volunteering for the tutorial, I enjoyed the material and learned new things. This tutorial introduced me to Anaconda. Anaconda is a free and open source distribution of the Python and R programming languages for data science and machine learning related applications (large-scale data processing, predictive analytics, scientific computing), that aims to simplify package management and deployment. I found Anaconda to be very useful and I plan on mastering it and using it for projects in the future. The session also introduced me to Jupyter Notebook. Jupyter Notebook was a package included with the Anaconda installation. The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text. Uses include: data cleaning and transformation, numerical simulation, statistical modeling, data visualization, machine learning, and much more. I also found this useful and plan on using it for future projects.

The Next session I went to was called "I Learned Python, Now What: Python 102 Scientific Computing and Data Analysis." This a tutorial session that used

Anaconda to do a mini project. The goal of the project was to write code with the data he provided us. The way we used Anaconda during the session was very similar to using R Projects program. I enjoyed this session and learned new things as well.

Monday night for dinner PEARC18 scheduled a mentor-mentee dinner. This is where I met the mentor I was assigned to prior to the conference. My mentors name was Jessica. Jessica is a machine learning researcher and data scientist. Jessica was very nice and gave me very good advice for my career and future goals. She also gave me good advice for the hackathon and helped me choose which task I should do for the hackathon later in the week. I thought Jessica was a good mentor and I enjoyed the mentor-mentee dinner.

On Tuesday I participated in a student model challenge. For the student model challenge, we had to make teams of 4 with all of the students participating. My team was diverse and it consisted of students from different parts of the country and that attend different schools. Thomas was a member of my group, he is a senior at the University of Delaware, Sharon was a graduate student from the University of California, and LaQuandria was a student from the 4-week Coding institute. For the model challenge teams had to choose a problem to work on for several hours, test hypothesis, and update python code to create a model. The project my team chose was called infection. We had to research and write code on how malaria and mosquitoes affect tropical areas. For the project I did research on malaria spreading through Ghana, I also made the power point we had to present the next day. The model challenge went from 10:30am through 5:00pm. On Wednesday, my team had to present our model. The title of our presentation was "The Mathematical Modeling for Malaria Transmission." I thought my team presented our project very well. I really enjoyed this experience working with new people to create a project. This project has built relationships and now I am friends with the people I worked with.

Thursday was the last day of the PEARC18 conference. I started my day off by going to the Awards lunch. Students and participants of the conference were being recognized for their projects and accomplishments. I would say PEARC18 was a successful conference, besides the internet troubles all throughout the week. At this conference, I networked with many new people and learned lots of new things. Thursday was also the first day of the Science Gateways Community Institute hackathon. The hackathon started at 4:00pm on Thursday and ended at 4:00pm on Friday. The hackathon started with students picking their gateway tasks and assigning groups. The teammates I had for the hackathon were Alexis and Solomon, two interns of the 4-Week Coding Institute. The name we chose for our team was #HackAttacks. The gateway we chose to work on was myGeoHub task 2. For this task we would have to design and develop a Jupyter Notebook to collect and analyze Twitter activity during a weather event. It took my team a while to figure out what we wanted to do with this gateway, but when we finally came to the conclusion that we wanted to track the most popular hashtags on Twitter that people were using to tweet about the weather events going on in their areas. I thought this was an achievable goal with hard work.

The next day when the hackathon ended, we finished our project and presentation that we would soon have to present. During presentations my group was the second group to present. After the presentation I thought it could have been presented better if we had gotten the proper sleep and

had enough energy. During the award ceremony dinner my team and I had won the peoples choice award, where the people outside of the hackathon voted for the groups presentation that they liked the most. I enjoyed my first SCGI Hackathon experience and I look forward to participating in future hackathons.