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PEARC 18 Travel Report

This year the Practice & Experience in Advanced Research Computing(PEARC) conference was held in Pittsburgh, PA at the Wyndham Grand hotel. The conference consisted of workshops, tutorials, oral and poster presentations, and birds of a feather talks. The conference also allowed students the opportunity to be paired with mentors and discuss potential internships and careers. The students were also expected to volunteer throughout the conference and assist with some of the necessary in and outs associated with the conference. One takeaway from the initial meeting was the lack of food and beverages.

First, the trip to Pittsburgh lastly roughly eight hours and consisted of constant ear popping. The scenery was worth the ear popping as often one would be gasping not for air, but instead at the amazing landscape. The trip was filled with traffic and rough roads, but these roads were often followed long periods of naps and laughter on the van. Upon arrival at the hotel we waited to receive our rooms and then took our belongings up to change for registration. After registration we attended several introductory presentations as a warm up to the rest of the conference. One of these presentations discussed the opportunities within the F.B.I. as a computer science major. The next presentation discussed the importance of implementing computer science into the field of medicine. This discussion was very helpful for those seeking a bioinformatic or computational science degree but was not limited to just them as the discussion after was very intriguing for all in attendance. Those presentations concluded and then we were introduced to the conference and our volunteering duties were discussed in depth. In addition to our responsibilities we were also given our volunteering t-shirts which looked nice to be honest. Immediately preceding the first meeting we were given the opportunity to explore the city of Pittsburgh and find something to eat. The conference continued the next few days until its end on Thursday. Pittsburgh was a great choice for this conference as it was filled many things to do, including some amazing food. Overall, I feel that the conference was very beneficial in the exposure it gave me to research presentations. One thing that was very interesting to me was the student-mentor lunch and dinner.

The following next day the first round of tutorials and workshops began, which meant that volunteering also began. I was selected to volunteer for a tutorial discussing advanced manycore computing. This tutorial was very interesting as it gave me exposure to topics that I did not know existed. A part of my volunteering involved distributing surveys and sign in sheets to all in attendance which was around seven people. We were given a lunch break after the tutorial and then I proceeded to attend a tutorial discussing different Python tools for advanced users. These were also things that I had no clue existed but this session was even better because I already had previous training in Python. That previous Python experience allowed me to not be completely lost during the tutorial. This was the schedule for the remainder of the week, either volunteering or attending different presentations.

Another portion of the conference was the student-mentor lunch and dinner. These opportunities were very fundamental as they allowed me to connect with a professor from Michigan State University(MSU), Dr. Dirk Colbry. Our dinner consisted of some very interesting conversations as the topic of internships was one of the main proponents. Dr. Colbry did all but guarantee me an internship at MSU next summer either through the REU program there or the ENSURE program. We all so discussed my options for graduate school and this

included a talk about potential attending MSU. The student-mentor lunch was a follow up to the dinner. We continued to discuss some of the same topics from the dinner and we also discuss keeping in touch afterwards to pursue these opportunities.

The conference concluded on Thursday and we began our introduction to the hackthon right after. This began with an initial meeting to vote for the project of our choice and a bit of socializing with others. I was selected to work on the Cmsic² which was mentored by Dr. Mona Wong of the San Diego Supercomputing Center(SDCC). My team consisted of Lilshay, Nicki, Mo, and myself. The overall goal of the project is to create an image stack viewer within a web-application using javascript that can be launched by the COSMIC2 gateway application and should be capable of displaying a stack of five hundred to five thousand images, one at a time using HTML5 & JQuery. Users should be able to navigate forward and backward in the image stack via keyboard commands. The application should also allow users to add points to an image via mouse clicks and be able to delete these points. The users should have the ability to reject an image and display the images in movie mode with all the points they created. The points created by the user should be saved for all images and the user should be able to return a list of images' points and rejected images to the server when users click on the "Submit" button. An additional feature of the web application will be the ability to zoom and pan each image. The purpose behind the zoom feature is to allow the user to focus on certain areas that they previously marked. The hackathon lasted for roughly twenty-four hours and this time was not wasted. Throughout the night we were involved in several activities to help break the monotony of constant coding. The events were successful in doing this as they prevented me from dozing off several times. Overall, my group was able to create an image stack viewer within a web application that could go through twenty images one at a time. The user was able to navigate through these images via keyboard buttons and a slideshow of the photos was implemented. The application did not however allow for five hundred to five thousand images and the images we used were local and not on a server. Another shortcoming of our project was that it was not very user friendly. Our user interface could use some polishing as it was not very good looking now but given the amount of time that we had I was satisfied. Our project also allowed the user to delete images and apply marks to the images. The coordinates of the images were then displayed once the user clicked the submit button. This allowed me to gain knowledge of programming in javascript, HTML5, and JQuery. I had a genuinely good time with the hackathon and really like the experience I gained through it. I just want to give a big thanks to Dr. Hayden for selecting me to attend the coding institute and allowing me the opportunity to be exposed to such a vast array of programming styles and languages. The hackathon has made me consider working with the Science Gateways Community Institute in the future because I have found their work to be very interesting to me. After the conference and hackathon ended we endured yet another eight hour drive, but I would definitely say that it was all worth it. I really don't know of any other place where I could have received that kind of exposure and I hope to attend plenty of conferences moving forward.