

Summer Internship Report 2017

Andy Kim, C'19

Hometown: Seoul, South Korea



**Computer Science Research
Sewanee, Tennessee**

Provide an overview of the organization/research project and a summary of your responsibilities, tasks, and/or projects.

Professor Carl and I researched MapReduce. There are two parts to this research. One is to understand the basics and how to use MapReduce, using comparatively simple implementations using Phoenix, Phoenix++, WebMapReduce, etc. The second part is to find a way to use this system on smaller inexpensive multicore processor systems such as the Parallella computer system. We also explore the feasibility of using the Python library Keras for deep learning on the Raspberry pi platform.

During your internship, what did you accomplish or how did you make a difference? In what ways did you grow in your professional and technical skills?

This research topic was very challenging for me. I have never used C++ or Python language. Starting from scratch, it was quite difficult to catch up the schedule and what I needed to do. I worked more than what I needed to. I worked even at night and also on the weekends. After few weeks, I was more confident, but more difficult tasks came.

Describe a problem that you helped to solve at your internship. What skills or knowledge from your education at Sewanee helped you address the problem?

I major in Computer Science in Sewanee. What I learned in Computer Science class was really helpful. I had so many problems with my programs and codes, but Computer Science Professor Carl's education style, such as "TIAS" (Try It and See), helped me to solve those problems. Instead of thinking deeply how to solve problems, I just tried bunch of different ways, and fixed them. I also think that the liberal arts education system, such as providing small classes and more opportunity to get close with professors helped me address the problem.

In what way were your teamwork skills strengthened?

This research was mostly me working on things the professor and I decided to. I don't think my teamwork skills strengthened a lot, because I had no co-workers to strengthen with. However, I still communicated with my professor.

How did your internship affect your career plans?

During the research, I had to look for many different Python libraries, such as Matplotlib, Keras, Theano, Tensorflow, etc. I got really interested in Tensorflow and other machine learning libraries. I think I would try to learn them more deeply and see if I want to be a machine learning /artificial intelligence engineer.

In what ways did your internship cause you to encounter people of different backgrounds from your own? What steps did you take to communicate effectively with such persons? What did you learn from such persons' perspectives?

I mostly worked on my own, and if I encounter any problems, I looked for the solution on the internet. I think that is very common for programmers, but I also agree that computer scientists need to develop their communication skills and learn from other persons' perspectives. I will try to develop it next summer when I am an intern in a bigger school or company.

Words of thanks to your internship funding donors:

I really appreciate your internship funding: I have learned a lot from this research. We are excited to show our progress and what we have learned. We still have two more weeks left to finish our research, so we will put our best effort until it ends.