

## ヒューマンウェアインターンシップ報告書

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## インターンシップ体験記 (海外インターンシップの場合は英語で記入)

During the internship, I learned a lot both in academics and culture. I will start with the preparation. There are several problems I met in preparing the intern. Among them, I think housing maybe the biggest problem. I will talk my own experience and what I learned during the intern. Because it is almost no single room house for one person to live, foreign students have to share housing. The first thing for interns to take seriously is safety. Some schools especially in the US are surrounded by dangerous communities with high crime rate. We should find the safe communities to live instead of finding places close to schools. For the humanware students who are not allowed to rent a car, a good choice is to live along the bus route with supermarkets. For choosing roommates, students should be careful to live with colleges, they may have parties and very noisy at night. For me, I started with the school forum, after talking with some students/visiting scholars. I find a place just next to a bus stop, it proved to be very convenient during my stay.

For the research plan for the internship. When I arrived at Innovative Computing lab at Tennessee University, I was assigned to Prof. Yamazaki and Prof. Tomov. They were working on high-performance linear library called MAGMA. There are plans in adding randomized matrix decomposition algorithm to MAGMA. Randomized matrix decomposition become popular in recent years. We decide the intern topic to be multi-GPU to accelerate randomized matrix decomposition.

For communication with colleagues, all Ph.D students are very easy-going. They helped me a lot at the beginning of the internship. They are also willing to teach. They will spend a long time to explain some ideas to each other until both were understood. The coffee break is an important time to communicate with other researchers. I highly recommend going to coffee break twice a day just for chatting. I think my spoken English improves a lot by the coffee break. For the working environment, it was mediocre in University of Tennessee. the whole building where I worked at is very old. The office only has very small windows and the equipment is obsolete. It feels a little oppressive at the beginning of internship, but I get used to condition later.

For the living cost in Tennessee, it is comparatively cheaper than other cities in the US, the housing cost is less 1000 dollars a month including all the utilities. As Tennessee is an agriculture state, the price of food is about 20%~40% cheaper than Japan. On the other hand, articles for daily use like kitchen soap/paper and etc. is very expensive. Mostly 2 to 3 times of the price in Japan. For the transport cost, it is 3 dollars one day for around trip to school. There is no bus in the weekends. If I want to go outside, I have to call for a taxi. This will be the extra cost for living. Barbers and related stuff have almost the same price as Japan. For clothes, there is several outlets around the city. The price is much cheaper than Japan. There is no need to buy extra clothes just for internship in the US. I have brought a lock-free smartphone to Tennessee, so I just bought a sim card with half year plan. I recommend getting a smartphone and buying the simcard plan before going to foreign countries. Because one need to look up for information immediately after arrival.

The life in Tennessee is pretty relaxed. People are all very friendly and help. I did feel any inconvenience when I went through all the procedures at school. For the daily life, thanks to low population density, there will never be any crowd in the bus. Shopping is almost very satisfying. The supermarket is very big and there are no waiting lines at the cashers. The inconvenient part of life in Tennessee is the infrastructure. There was power failure several times, and the internet connection unstable. Students should be aware that it is quite normal thing in a foreign country.

## インターンシップ体験記 (続き)

For the weather, Knoxville city is located in the foot of the Great Smokey Mountain. It rains a lot. The humidity is always high. For students who are not comfortable with high humidity, I recommend buying a dehumidifier. The weather is moderate in summer. The highest temperature is 33 degrees and very cool in the night. The temperature drops quickly after November. The minimum temperature I experienced was -7 degrees. There was small snow just like Osaka. Since most houses are equipped with heaters, it won't be a problem for most students. The air quality is extraordinarily good. Compared with cities in the north part of US or Canada, Tennessee is quite livable place.

The restaurant business in Tennessee is not advanced like Osaka, there are no much restaurants around school. The only few places serving food at school are all fast food. After going for several times, I just gave up. Like all the other students, I brought lunch to school every day. So, I have to make three meals every day and it took up a long time. For other restaurants, it may not fit most people's taste. The southern taste is special. The most famous food in Tennessee is called mac and cheese. The local Food like these usually contains high volume sugar and calories. For the Asian restaurants, they are deeply Americanized, most foods I had experienced are deeply fried and seasoned with sweat soy sauce or teriyaki sauce. I recommend students who plan to have internship shall learn to cook before going.

For the security condition, the place I live and University are both very safe. I never met with any dangerous condition. I cannot say this will not be the same in all Universities in the US. There is horrible news from other schools all the time. Students who go to US should be cautious in choosing schools/company for internship. The crime rate of cities may vary significantly in US. There are a lot of database on the internet, which can be used for reference.

At last, I think this internship experience is valuable. The work during the internship has been accepted to a conference. I made connection with top researchers in the field of high-performance computing. This experience will be helpful in my whole career path. Thanks to the support and help from Humanware project.