

Intern Experience Sharing

This summer I worked as an intern in Synopsys, which is an American electronic design automation company, IC interface IP supplier, focusing on chip design and verification, chip intellectual property and computer security. I was assigned to the verification group of Synopsys. Even though this is a hardware group, I harvest the most from my self-learning ability and combine it with my professional knowledge for my work. Take an example, VCS is a verilog simulation software developed by Synopsys. I heard about some verilog simulation software at school, such as Quartas and Modelsim, but never used them before. So I first went to learn some basic knowledge about Verilog through Udemy and websites, getting to know what Verilog, System Verilog, Coverage Driven Verification, Hardware Design Simulation are. And also learned some VCS knowledge from the company's tutorial. Definitely, this can not be separated from my manager and mentor's help. So during the first month of internship, I was mainly through self-study and peer guidance and gradually became familiar with the company's software and business. Furthermore, ITS, Intelligent Regression Test Selection, is a new machine learning algorithm in the chip industry. ITS algorithm is given changelists, selecting a minimal test set with highest likelihood of failure. During my study in Santa Clara University, I took the courses COEN 240: machine learning and COEN242: big data taught by Prof. Zhiqiang Tao, which helped me lay a deep foundation for my machine learning and data analysis knowledge. My project is to build up a data discovery tool which uses regular expressions to extract useful data from users provided regression files. And put those useful data into our own database and export to a .csv file to do future analysis in order to check whether that data is suitable for ITS training. During this project, I can combine what I learned in school, such as regular expression, database, python, machine learning and object oriented programming knowledge into work. Professor

Tao's classes also helped me gain a better understanding of how to design optimal training data to drive the learning algorithm to a target model and how to develop computational learning models and theories to predict the results. Other skills I learned are how to finish the tasks on time, and how to effectively communicate with colleagues and managers. Because I have an intern project sync meeting weekly. Every week at that meeting I need to report on my progress this week and talk about our plan for next week. I learned to explain better to managers which part I have done, what problem I still have, and what improvements I can do. I think these are also the most important things that I have entered into my work in the first step.

I also find some very precious things working in Synopsys. First of all, Synopsys pays attention to everyone. Synopsys cares about everyone once he/she becomes an employee of this company. Synopsys provides health insurance for everyone. I still remember that there was a new employee welcome on the first day of my work. Synopsys is very friendly to welcome everyone and enthusiastic to bring us familiar with the company. There is an InterX organization which is committed to serving all interns. They often organize meetings such as meditation, yoga or introducing company benefits which helps new interns better adapt to company life. Synopsys also sends us some small gifts or some Starbucks gift cards, because the company pays attention to everyone's life in the company. Second, Synopsys is enthusiastic and creative about the world. I have a deep feeling that Synopsys is no longer just a chip design and verification company. They are already moving toward artificial intelligence, 5G, autonomous driving and more. Synopsys keeps creating more features and brings new capabilities to their devices. Just what I did this summer, Synopsys has already incorporated verification with machine learning algorithms. Furthermore, Synopsys aim at making a positive difference to society. Besides Synopsys's product, they also providing free online courses and mentorship both for employees

and society. Last but not least, Synopsys show respect to differences. In Synopsys, no matter if you are Asian, Latinx, black or white, woman or man, with what kind of background, everyone will be treated equally. Our team is a multicultural team. People are from the U.S, China, India and many other countries. However, in this multicultural team, everyone respects each other. We trust each other and progress together.