

My Contribution Goal in Digital Design Field

I determine to continue to grow and advance in my career path as a Digital Designer after I got hired by Boeing at the department of ASIC FPGA SoC development. Although I was not sure what career path I want to achieve when moving from Cambodia to America in 2004 at the age of 21, I am sure I want my life to be surrounded with Science and Technology, which gears me toward Engineering path.

My first major in Computer Science was chosen without clear objective of what career I want to pursue. During my first year at CSULB majoring in Computer Science, I took a course, CECS 201 - Computer Logic Design I, my interest was built in digital design. I then switched from Computer Science to Computer Engineer. At the same time, I was interested in many science courses including Biology, Biochemistry, Chemistry and Math. I always dreamed to be either an Engineer or a Scientist. I was not clear of what I am good at that allows me to be an asset and able to contribute to the society. After exposing myself to all my possible interest, I decided to earn my B.S in Computer Engineering.

Feeling not fully equipped to be a major contributor in Engineering career, I continued to earn a MS degree in Computer Engineering. Looking back at all the projects I worked on, I was so proud that I stayed on Engineering path. During the two years in MS program, I was able to expand on my undergrad design skill from two separate systems (Embedded vs. FPGA) to one integrated system of Embedded System and FPGA Design, which was taught in the course called Software and Hardware Co design. Also, I had a chance to bring the CPU design to the next level – upgraded from non-pipeline to 5-stage pipeline CPU. Earning MS in Computer Science was my other thought of might be beneficial in my career which led me to enroll in advanced Math courses (Theory of Computation and Adv Analysis of Algorithm) while I was in MSCE program having an option to apply to MSCS after my completion of MSCE.

Getting hired as an ASIC FPGA designer does not full fill my wish to be a major contributor in my career field as an Engineer. The satisfaction I used to have after completion of all of my course projects has been diminished when start working with other Engineers at Boeing. There is a hug gap of knowledge I need to fill to be able to grow as a Designer. For the past two years, I was able to learn on the job using my Computer Engineering knowledge to work on basic design and assist in non-design tasks, such as writing testbench, verifying, debugging and documenting project milestone. In the Computer Engineering major, I have never been exposed to VLSI, IC and Mixed Signal. I am unable to work on advance design project which involves advance knowledge and skill to translate system requirements to ASIC FPGA design.

I have found a way to close my knowledge gap and continue to grow as an ASIC FPGA designer. MSEE program not only offers courses in the concentration I need – VLSI, but also offers interesting courses that fulfills my technical and Mathematical aptitude such as concentration in IC and Aerospace Controls Option. I would want to learn Engineering Analysis, and Introduction to Mathematical Methods in Engineering II. I might not be using the knowledge in my Digital Design; I can use it in collaboration with Engineering team in different departments, namely Aerospace department. I am excited to embark on my next journey as a VLSI Digital Design student at USC.