

### STATEMENT OF PURPOSE

From the viewpoint of not only appreciation, but creation, digital art — graphics, animation and music — have long fascinated me with their high capability and expressibility. Since my childhood, I have gained much sense of achievement by exhibiting my works to friends. I worked on many extracurricular projects in website designing from which I earned valuable experiences in digital image editing. As I got older, amazed at the features produced by animation studios like Pixar and Dreamworks, I self-studied generating three-dimensional computer graphics (3DCG) with commercial softwares, and led a team to give introductory lectures about 3DCG at the information club of my high school. These were also the years where I had fun toying with midi keyboards and audio editing softwares, trying to compose my own pieces of music. Indeed, I have become addicted to expressing myself via various forms of digital art. Through my course of broad and vigorous exploration, I realized that the strength of computers as tools for artistic productions lies in its ability to generate complicated effects with sophisticated simulations, and yet its weakness lies in the difficulty in translating artistic intentions into programs and discrete sets of parameters. Hence, I aimed at narrowing the gap between technology and people so that digital artists can concentrate more on their works rather than their skills, and can effectively unleash full power of computation on artistic purposes.

My passion for digital art, especially for 3DCG, motivated me to dive head-first into a series of challenging courses in the university curriculum. These include “Digital Image Synthesis”, “Digital Visual Effects”, “Computational Photography” (lectured by Professor Yung-Yu Chuang), “Interactive Computer Graphics” (lectured by Professor Ming Ouyang), “Digital Image Processing” (lectured by Professor Ming-Sui Lee) and “GPU Programming” (lectured by Professor Wei-Chao Chen). I worked hard, particularly in the aspect of term projects, where I and other members in my team had great times hunting for interesting research papers about computer graphics, implementing the algorithms and adding our own touch to them to improve the result. In addition to the term projects, I and my friends have tried to wrote our own ray-tracer from scratch in the sophomore year. Although our knowledge in either rendering or coding were rather limited back then, we spent a month digging into books and worked up the program to a satisfying extent. It was an unforgettable project, because of not what we have achieved but the excitement about revealing the secret behind 3DCG for the first time. (Conclusion sentence...)

(The lighting-by-guide project.)

As I originally enroll in university to study chemistry, a compromise for not doing well enough on the college entrance exam, I strived in my freshman year and got qualified in double-majoring computer science. While creative innovation and careful system analysis are

the backbone of engineering, the ability to think critically and accurately is strongly emphasized in the field of natural science like chemistry. I got the best of both worlds. I joined the theoretical chemistry lab led by Professor Yuan-Chung Cheng, where we verified novel designs of ultrafast nonlinear electronic spectroscopy by simulating quantum dynamics of molecules interacting with light. The work experience at the junction point of computer science and chemistry enables me to formulate and implement physically accurate models on computers. (...)

Personally, I am aspired to a career as an artist more than a scientist or engineer. I enjoyed creating and telling stories, through which I conveyed my love toward great things in life. I collected preliminary ideas on my blog and gradually developed them into complete works. In my senior year, I voluntarily participated the graduate musical of the chemistry department as the director, where I led a brilliant team to write the scripts, to compose the scores, to design the stage and to act. Yet(?), my ultimate goal is to establish an animation studio in my homeland, Taiwan, producing movies as well as developing novel techniques in the production pipeline.

I aim at (doing something) in my graduate studies.