

Senior Thesis Experience Kevin Hu, Class of 2020

If you are considering writing a thesis, I would highly encourage you to take the leap and pursue this year-long endeavor. All you need is a general area of interest, some curiosity and drive.

“First you jump off the cliff and you build your wings on the way down” - Ray Bradbury, Fictionist

What I Did

Entering my senior year, I had just decided to pursue a thesis in the QSS program and was interested in studying the gig economy (the labor market that consists of temporary or contract based work arrangements i.e. Uber drivers). From the start, I intended to work with Professor Feng Fu from the Mathematics department. I took Math 30.04 Evolutionary Game Theory with Professor Fu and was drawn to his enthusiasm and interest in large problem spaces.

With a game-theoretical approach, I examined the influences of markets, technology and policy on firm and worker preferences for gig labor. Theoretically, we presented a new extension to the replicator equation and modeled oscillating dynamics in two-player asymmetric bi-matrix games with time-evolving environments, introducing concepts of the attractor arc, environment-actuated driven oscillation, trapping zone and escape. In other words, we applied mathematical models to study how markets, technology and policy influenced preference for gig labor.

Although my project was highly technical, I didn't begin with a plan or a formulated method of studying my topic. I remember entering fall term with just an advisor in mind and a few general topics of interest.

What I Learned / Some Advice

The process of creation itself is full of uncertainty. When writing a thesis, your advisor will help guide this uncertainty, but you need to power the engine room and be the one driving the project forward. Choosing a knowledgeable advisor will help shape this guided uncertainty. Choosing a topic of interest will help you propel the project forward throughout the year.

The process of research is like bouncing back and forth between 0 and 1. You may find that the result of your research will lie somewhere in between. The day that you solve a problem, you think you have something. The next day, you may realize it's broken or you're wrong, and you actually have nothing. You'll finish your project and realize what you have is somewhere in between 0 and 1.

In my opinion, the greatest value of a senior thesis is to have an ideated and **fully executed** independent (relatively long-term) project on your internal track record. Whether you leave college to enter industry or academy, it is crucial to understand the importance of finishing what you start and the emotions you experience in between.

The people whom you choose to work with are most important. A big hearty thank you to Professor Fu, Xin Wang (Fu Lab), Professor Cooper, Professor Herron, Professor Sirianni, Professor Wu, my thesis cohort, my friends and my family for their support.

I will end with some aphorisms that I think you may experience/ find useful for yourself when writing your thesis. For myself, I have found that you don't change in the moment someone gives you advice. It is often in the moment in which you yourself experience a similar adversity when advice may provide some awareness and serve as a reminder of your options.

“Perhaps the most valuable result of all education is the ability to make yourself do the thing you have to do, when it ought to be done, whether you like it or not. It is the first lesson that ought to be learned and however early a man's training begins, it is probably the last lesson that he learns thoroughly.” - Thomas Henry Huxley

“We don't rise to the level of our expectations, we fall to the level of our training” - Archilochus, Poet

“It's the work on your desk. . . . It's the work on your desk. Do well with what you already have and more will come in.” - Charlie Munger, Investor