Teaching Statement

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I am an econometrician, and three commitments guide my teaching: enthusiasm for the material, patience with every student who is willing to try, and empathy for students who are struggling. These commitments matter even more in an age when generative AI can produce any formula or line of code in seconds, because a teacher's value now lies in what AI cannot offer: intuition and human connection. I have brought this approach to teaching at every level, from undergraduate courses to Ph.D. courses. Most notably, as the instructor of Emory's undergraduate econometrics lab, I created all of my own course materials, and students in my larger section rated my teaching above comparable lab sections. Building on this experience, I am prepared to teach econometrics, statistics, and data science at all levels, and I would like to develop a field course on machine learning methods for economists.

Why I Teach

My commitments to enthusiasm, patience, and empathy come from my own path into academia. I am a first-generation college student, and neither of my parents had the opportunity to attend high school. When I started college, I did not know what a Ph.D. was or what research meant. What changed my path was a teacher. As a sophomore, I walked into Professor Zhentao Shi's office to tell him that I wanted to do econometrics, before I had the mathematical background the field requires. He did not turn me away. Instead, he gave me chance after chance, and over the next four years I grew from that sophomore into his research assistant, and even his coauthor. It was also his passion for the Lasso (a statistical method for models with many explanatory variables) that inspired my interest in high-dimensional econometric methods.

From that experience I take three lessons into every class I teach. First, enthusiasm is contagious: if I am not interested in what I teach, I cannot expect my students to find it interesting or important. Second, patience matters: if students are willing to try, I give them the chance, whatever their background. Third, empathy matters: I was once lost too, and every student's path is different.

I also keep in mind one fact that matters even more: I may teach a course many times and can improve with each iteration, but for many of my students it will be the only time they study the subject. That is why I give every class my best, rather than telling myself I can always do better next time. What students take from my class decides more than whether they understand the material correctly. It can decide whether they go on to learn more, or never want to touch the subject again. A good teacher can change the course of a student's life, as one changed mine.

Teaching in the Age of Generative AI

Generative AI changes what students need from a teacher. Every teacher today works alongside a colleague who never tires, is always enthusiastic, is available around the clock, and knows a great

deal. So does every student. When students rely on generative AI, I do not think the answer is to blame them. The better question is what I can offer that a twenty-dollar, or even a hundred-dollar, subscription cannot. If I cannot answer it, the problem lies with my teaching, not with my students. Respecting each other's time means that every lecture and office hour should give students something they could not get from a chatbot in the same minutes. My answer has two parts, intuition built on each student's own understanding and human connection, and both come from communication.

In my econometrics lab at Emory, this meant teaching students to question results rather than simply produce them. Since AI can run a regression in seconds, the course's central goal was for students to question results, evaluate assumptions, and draw sound conclusions from data. Students were encouraged to use AI tools, as long as they verified what the tools produced and their work reflected their own understanding. In class, I emphasized critical thinking over perfect answers, and weekly lab exercises were graded on completion rather than correctness.

Empathy: listening for where students get lost. I always ask students to share their thought process, both because I am genuinely curious about how they reason and because it shows me where they got lost.

Intuition before implementation. I teach why a method matters before how to compute it. An AI tool can write down an estimator or produce working code in seconds. What it cannot easily do is see where a particular student's understanding stands and build intuition from there. I believe intuition is more important than implementation, because intuition is what tells students why a method matters, and if we do not understand why something matters, we have little reason to be interested in understanding it. For example, I teach model specification by starting from what students already know. Multicollinearity begins with the dummy variables from the week before: what goes wrong if a regression with an intercept includes both a "yes" and a "no" dummy? From there, students see in simulated regressions what happens when two regressors carry almost the same information, before we turn to formal diagnostics. As one student wrote, "The style of our class notes, in which Ka Yan walks us through the concepts first and then code, step-by-step, was critical for me to understand the lecture concepts well."

Learning together. I treat teaching as an exchange in which I learn too. Even in the most foundational material, my students' questions give me new ideas, and this kind of exchange, with students as much as with colleagues, is what makes academia the place I want to stay. The material also stays fresh for me: every time I reopen a foundational textbook, I discover something new by connecting it to what I have learned since my last reading.

Teaching Experience

I have teaching experience at every level of the curriculum. My teaching began at The Chinese University of Hong Kong (CUHK), where I was a teaching assistant for three undergraduate courses and wrote four data projects for a course on the economics of social networks. At Emory, I have been a teaching assistant for undergraduate courses in econometrics and data science, master's courses in big data econometrics and cost-benefit analysis, and Ph.D. courses in probability theory and statistical inference, econometric methods, and time series econometrics.

In Fall 2025, I was the instructor for the undergraduate econometrics lab, with two sections and 45 students in total. I created my own course materials and taught in Python through GitHub

Classroom, with weekly hands-on exercises, four problem sets, and a final group project in which students pose their own economic question and weigh what could bias their answer. To make sure no one fell behind, each lab came with both an empty notebook to code along in and a completed one to check against. All of these materials, along with my CUHK projects, are available at kayancheng.github.io/resources.html.

Students' evaluations reflect this approach. Averaged across all eight questions on Emory's four-point evaluation scale, my larger section scored 3.64, compared with 3.37 for comparable lab sections. My smaller section scored 3.55, but its report has no comparison group because it was the only section of its size. Another student wrote that the weekly lab assignments "were in-depth enough to prompt reflection on the week's concepts, but didn't take so much time that they became a burden."

Future Teaching

I am prepared to teach at every level, from undergraduate econometrics, statistics, and data science, through master's courses such as big data econometrics, to the core Ph.D. econometrics sequence. Drawing on my research, I would especially like to develop a field course on machine learning and semiparametric methods for economists. The course would begin with high-dimensional methods, where my own interest began, and build toward recent methods that use machine learning to estimate causal effects. Along the way, students would learn not only how these methods work, but why they work and when they can be trusted. As AI tools and machine learning become part of everyday empirical work, that judgment is what I most want them to take away.

Wherever I teach, I hope to be for my students what Professor Shi was for me: a teacher whose passion makes them want to learn more, and who never gives up on a student willing to keep trying.