I believe teaching is the most influential activity we partake in. It does not have to be in an official setting such as a classroom but can be as simple as teaching a friend to tie a tie or showing a stranger how the bus ticket system works. Having learnt from good teachers who were patient and understanding of my learning struggles and helped me learn at my pace while giving me the freedom to make mistakes without judgement, I want to help the next generation of students learn about Civil Engineering similarly.

I have five major goals for student learning: know how to analyze the problem at hand rationally and make reasonable assumptions, Know how to find the proper resources to tackle said problem, collaborate with and learn from peers and experts from other disciplines, try out novel approaches and be okay with things not always working out, and lastly, keep an open mind and a desire to keep learning and innovating.

Most engineering courses usually deal with the mathematical formulations and methods to solve them, but not enough time is spent on tying the problem to a real-world scenario and translating the scenario to numbers in the first place. As a teaching assistant for a probability class, I saw that students knew different distributions, but when given a word problem, they often stumbled while deciding the right distribution and formulae to apply. A key component of my teaching pedagogy will be to teach students how to break a real-world situation down to smaller parts and then translate it to the corresponding engineering concepts. I will assess this skill by designing the assignments, exams, and projects as practical problems rather than abstract math problems, giving my students practice in building appropriate models and applying reasonable assumptions. For example, rather than framing a question as "Calculate probability of no arrivals in 5 min for a Poisson process with rate λ", a more appropriate question would be, "If a coffee shop has λ new customers per minute on average during morning rush hour, what is the probability that no customer shows up for 5 minutes"?

My second goal for student learning deals with knowledge of available resources. As Civil Engineers, we have established civil construction codes, legal practices, and manuals. We are expected to know the right resource to refer to. With the advent of the internet, resources are accessible, but experience and training help identify appropriate resources and venues to access said resources. While mentoring undergraduates, I had to initially guide them on how to access research papers, use various criteria to judge their relevance to our work, and access the right tools/tutorials for simulation and analysis work. Once they knew the appropriate ways to access the right knowledge and tools, they could build on it quickly and harness their prior knowledge and creativity to synthesize something novel. This skill will be taught through smart course project design and by requiring verified sources, thus making it clear if they were able to access the right resources. Depending on the course, I will utilize a subset of reading responses, programming sessions, software and data based assignments or traditional assignments and exams to assess student learning.

My third goal focuses on collaboration and knowledge exchange among peers and experts. While collaboration and teamwork have been buzzwords for decades, it takes a new significance in today's world of globalization. Engineers not only collaborate with contemporaries from across the globe, but also interface with non-engineers to exchange project information and impact. Being able to deal with various demographics is something that has been a challenge I have faced while studying in India, Singapore and USA, while having to overcome superficial differences (such as accents) as well as more deep-rooted differences (cultural upbringing, different contextual connotations, style of comprehension). From personal experience as a traffic consultant to Westlake Hills city, presenting ideas in a town hall setting is very different from presenting at any academic setting. Working with various socio-economic

stakeholders can be simulated in the classroom and later built upon outside the classroom. Encouraging the usage of every difference as a learning opportunity rather than conflict and allowing my students to maintain an open mind towards possibilities other than their world view is crucial towards achieving this goal. I will inculcate this by including collaborative discussion activities in class as well as group work for miniature real-world projects. Specifically, I want to stress on equal opportunity, service-based projects, language sensitivity, and inclusive curriculum. The pre-requisites shall be kept to a bare minimum to account for differing academic backgrounds, and initial lectures will focus on getting everyone up to speed. As students interact with diverse demographics, they will be adapting towards future challenges and developing a positive outlook towards diversity. This goal also aims to teach students to look at the big picture and convey it effectively to non-engineers, just as one would to the public on many infrastructure projects. Inclusive learning has many interpretations, and this is my take on it, free of prejudices and stereotypes.

My fourth goal looks at developing student confidence in the classroom and treating failure as a learning experience. I solicit mid-semester and end-semester feedback from my students, and the most echoed reason for lack of participation is the fear of saying something dumb or appearing stupid in front of the instructors or their peers. It is a very rational fear of being judged and thought of as stupid and is tied in to their self-worth. Getting students to open up and participate in class is important, but it is more important to address the root of the problem: their fear of failure. I want to imprint that stumbling is okay and often important to the process of learning. It is more important for them to learn this than build up a personal camaraderie with me because students should be able to translate these across instructors and disciplines. Without grades as the primary incentive, students are willing to try things they wouldn't otherwise. This provides space to try to learn in different ways, take risks with learning styles that otherwise would not be feasible, and be open to adapting their approach. In more concrete terms, I plan to design my courses with assignments where the two lowest scores are dropped, exams where only a subset of questions are compulsory, and frequent project reviews so they can receive targeted and timely feedback.

My final goal for student learning is developing and encouraging lifelong learners. A student may be comfortable with stumbling on the way to learning but may not have the innate drive to keep learning. This is an ambitious goal which does not have a straightforward one-size-fit-all solution. I have strived to teach this to my students as well as my mentees and have noticed that different personalities needed different techniques. These techniques include but are not limited to either giving them pieces of the larger picture and letting their inquisitiveness fill the rest, or by charting out a clear linear path and letting them progress by themselves. This is something I would like to gain more experience with through more interaction with students. It is only in enabling students to be innovators and lifelong learners that we can progress beyond set practices.

I have set these goals for my teaching and my methods have been adapted to fulfil these goals. A common theme tying these goals together is that they go beyond the initial differences in student career paths and help students succeed in any environment, be it a job or graduate school. The underlying philosophy can be interpreted to be focusing on the pareto principle, where 20% of the efforts account for 80% of the effects, and my focus is on the 20% of transferable skills and habits which will help the students improve significantly. While the remaining 80% effort is not ignored, prioritization of skills helps me work with the students better. In conclusion, not only do I teach the students Civil Engineering, I wish to teach them skills which transfer to any discipline or career and help them succeed at life.