Teaching Statement

Tamal Das

Learning, teaching and research are cornerstones of an academic’s life. We learn through teaching/research, teach what we learn/research, and research to bridge the gaps in our knowledge and expand our learning. Solidifying one’s own knowledge by filtering it through curious minds, while simultaneously shaping several minds makes the prospect of teaching a win-win profession. In addition, teaching often brings out the gaps in the subject matter itself (thereby leading to research) or in our own understanding. Hence, I find teaching a privilege, as much as it is a serious responsibility.

Teaching Experience

I have taught several courses (software defined networking, broadband communications, optical and access networks, probability, linear algebra, MATLAB, Gurobi) in various capacities (guest/invited lecturer, co-instructor, teaching assistant) to diverse students (from undergrads to doctoral candidates), in varying class sizes (from 5 to 100). My teaching experience includes both classroom lectures, as well as guided lab sessions. I have also mentored students ranging from undergraduates to doctoral candidates on their respective thesis/projects. My mentoring approach is to offer broad research directions based on mutual interests, empowering pupils to find a way, and help them develop a sense of ownership of their work. I guide them to think critically, challenge the conventional wisdom, develop problem-solving skills, practice analytical rigor, and deliver effective written/verbal communication.

Teaching Methodology

I believe teachers inform, inspire and guide. They inform the students the essence of existing knowledge, spark the students’ curiosity inspiring them to explore further, and guide them to overcome hurdles on their journey.

In teaching a class, I present the concepts from first principles, thereby equipping the student not just with a specific concept, but with a broad approach to acquire knowledge. In learning, the means (process of acquiring knowledge) is more important than the end (specific domain knowledge). What was a cutting-edge topic yesterday, maybe outdated today. Hence, I emphasize the “why” and “how” of any topic, beyond the mere “what”; thereby equipping students with broad life-long learning skills. Keeping the learning outcomes in mind, I plan my class well in advance with an appropriate mix of classroom content, hands-on sessions, assignments, and projects (as applicable). In addition to preparing the content for a lecture, I devote significant efforts to tailor it for the specific audience under consideration, making it easily relatable and relevant with ample real-world examples. I find student presentations (be it individually or in small groups, based on class size) on relevant course topics effective – for students to consolidate their understanding, and for the instructor to gauge the students’ understanding on the topic. Group assignments/presentations go a long way in peer-to-peer learning, very well complementing the teacher’s efforts. I also consider integrating the latest research into teaching to help the students keep abreast of the latest happenings on a given topic, and in turn prepare them for the real world.

Course Offerings

I have had exposure to both theoretical and applied topics, considering my inter-disciplinary undergrad in Mathematics and Computing. At the undergraduate level, I feel qualified to teach data structures, design and analysis of algorithms, probability and stochastic processes, graph theory, and computer networks. At the graduate-level, I feel qualified to offer advanced networking courses in emerging topics such as software defined networking and network function virtualization.