# Teaching Statement

**Bishwamittra Ghosh**
Ph.D. Candidate
School of Computing
National University of Singapore (NUS)
https://bishwamittra.github.io

A key motivation for my pursuing an academic career is the enjoyment I find while teaching and mentoring students. My perspective of teaching is an alternate way to strengthen my understanding of concepts, propagate the joy of learning to young minds, and nurture brainstorming. I am fortunate to have experienced the teaching of great professors and lecturers during my undergraduate and graduate studies. I envision my academic career and teaching experience as a pathway to contribute to the community to whom I am indebted for my knowledge.

**Teaching Experience.** During my Ph.D. study, I have the opportunity to be a teaching assistant in two courses in NUS, Singapore. In CS2030: Programming Methodology II, I have developed scripts to grade students' Java codes. The focus was to automate the process of checking certain coding formats, such as class dependencies and Java check styles. My generated report assists the course lecturer Henry Chia in the gradual improvement of students' coding skills. In another course, CS3243: Introduction to Artificial Intelligence, I together with fellow graduate students worked on designing course materials for Prof. Kuldeep S. Meel. I have learned the coordination of topics to be covered throughout a semester and how to divide them coherently so that students experience a gradual buildup of their understanding of artificial intelligence.

Before joining the Ph.D. program, my lecturer position at UIU, Bangladesh has given me hands-on experience in teaching undergraduate students. I have lectured two courses: numerical methods and data communication. My duty includes teaching a class of 30 students in each course, assigning semester projects, mentoring students, and grading exam papers. I have enjoyed every aspect of teaching, such as designing course materials in a comprehensible way for students of different maturity levels, solving tutorial questions with the active participation of students, designing midterm and final-term questions, and grading them. Additionally, I have conducted two labs at UIU: artificial intelligence and microprocessor & microcontroller. In these labs, I have demonstrated software coding and interfacing microprocessors with hardware. Thus, my teaching experience has broadened my knowledge of CS theory and its applications.

**Mentoring.**

- Mahi

- Shaamer

- Students at UIU

**Future Courses.** I am confident in teaching machine learning and artificial intelligence, probability theory and statistics, and introduction to logic and formal methods to undergraduate and masters students. Machine learning has witnessed its success in last decades through applications in different safety-critical domains. With that in mind, I aim to teach on trustworthy machine learning, particularly the fairness and explainability aspects of machine learning based on automated

1

reasoning, formal methods, and statistics. In particular, my teaching philosophy lies in introducing students with recent research outcomes along with fundamental concepts in computer science.