Teaching Statement

S. M. Niaz Arifin

A good teacher is like a lighthouse to me. Throughout various stages in my academic career I have always admired those school teachers and university professors who excelled at conveying their knowledge, skills, and values unto me. From personal experiences, I could single out those who have left lifelong imprints in my pedagogical mindset.

University teaching faculties have the important opportunity to contribute in shaping the young minds of students during some of the most critical junctures in their lives. At this academic level, the process of learning is especially contextual for a student - it does not happen instantly but builds upon the past experiences. Every student’s learning curve and expectations can be unique. As a teaching faculty, I plan to nurture this uniqueness based on my own academic background and experiences.

Teaching Experience

I am currently teaching the course Artificial Intelligence (CSE 40171) in Fall 2015 in the Department of Computer Science and Engineering at the University of Notre Dame (ND), and plan to teach Computing Fundamentals II in Spring 2016. My duties include designing the course, homeworks and projects, delivering lectures, and administering the course. In 2013, I served as a guest instructor with my supervisors for a graduate research course which covered several specialized topics in Computer Science and Biology. As a graduate student, I was a teaching assistant (TA) for six semesters at two U.S. universities. I was a TA for C/C++ and Java at the University of Texas at Dallas, and for Complexity Theory and Graduate Algorithms at the University of Notre Dame (ND). My office hours also allowed me to interact with students individually and get their feedback on various issues. I had the privilege of being a lecturer faculty at Eastern University in Bangladesh just after finishing my undergraduate degree, where I taught two courses: Compilers and Computer Information Management.

Teaching Interests

Based on my own academic background and research training, I would like to teach multiple facets of Computer Science. I believe the multidisciplinary nature of my graduate research makes me comprehensibly suitable for a wider array of course selections. For undergraduate level, I am interested in teaching introductory courses including Computing Fundamentals, Data Structures and Algorithms, Programming, Computer Graphics, Data Visualization, Data Mining, Database Systems, Computer Simulation and Modeling, Artificial Intelligence, and Machine Learning. For graduate level, I am interested in teaching advanced Database Systems and Data Warehouses, Data Science, Data Mining, Visualization, Simulation Analysis and Design, Computational Modeling Algorithms, Computational Biology, and Bioinformatics.

Teaching Philosophy

My primary goal for being a Computer Science teaching faculty is to prepare my students for the future so that they can be competent as industry professionals or academics. In short, I plan to encourage the growth and development of these qualities in my students: logical and critical thinking, organizational, problem-solving and troubleshooting skills, and ability to work independently and/or as part of a team.
I plan to emphasize the following:

- **Course Management:** I would prefer to keep my courses flexible. Students will have the option of selecting bigger projects or multiple smaller ones. I would like to progressively evaluate my students over the entire semester through assignments, projects, and quizzes rather than just through tests. More advanced courses may have higher emphasis on analyzing specific research problems or drafting research papers.

- **Motivation by Engagement:** I believe one of the essential ingredients for academic success is the right motivation. To ensure that my students have it for the course, I plan to engage them in a constant feedback loop by establishing regular meetings on an individual basis to learn their specific problems, issues, and other feedback, and adjust myself accordingly. Based on the classroom assessment feedback on what, how much, and how well my students are learning, I will refocus my teaching activities to help the students learn more efficiently and effectively.

- **Creativity:** Computer Science as an academic discipline requires students to be creative, inquisitive, and detail oriented. As such, I will emphasize on the logical thinking and analytical abilities of my students. I will promote their problem solving skills in software design and development, and create a friendly classroom atmosphere to welcome new project ideas. I will nurture their creativity and help developing their critical thinking ability by exposing them to multiple possible ways of tackling specific problems.

- **Adaptability:** The rapidly changing and ever-evolving field of Computer Science education requires students to be up to date with cutting-edge technologies (hardware and software). To cope up with this, I will emphasize on hands-on experiences in building prototype systems or working through pilot problems rather than just a theoretical treatment of the subject. I also believe in adaptive learning which lays stress on personalization - a teacher has the ability to supplement existing content (i.e., text book or curriculum) with current events or recent developments in the field for individual learner groups. Today’s technology, especially in Computer Science education, presents innovative and effective options such as blogs, wikis, and RSS feeds to promote adaptability. I believe guided adaptability can make my students well-versed on the latest relevant research findings as well as the well-implemented best practices in the industry.

- **Communication Skills:** Learning how to communicate effectively is both an art and a science. Excellent communication skill is often listed in the topmost in-demand skills for jobs. Proficient communicators receive information, understand and synthesize it, and express themselves with higher accuracy. I will motivate my students to learn some of these skills by arranging presentations throughout the semester. By selecting a format suitable for the scientific and engineering audience, students will team up to deliver their presentations, and learn to address questions from the audience as well as defend their answers. I will evaluate each team member’s contribution separately.

As a teacher, I hope to advance the intellectual development of my students, and to uphold the virtues of open mindedness and rationality by training and mentoring their young minds. I am confident that my past teaching experiences, academic background, and communication skills coupled with thorough preparation and enthusiasm for the field will make me an excellent teacher.

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October 14, 2015

S. M. Niaz Arifin Date