Reflections on Teaching

My passion for teaching was a motivating factor to join academia as a faculty member. At SUNY Potsdam, after having taught for 12 different courses over 6 years, that passion has only grown. I have been fortunate to have had the opportunity to teach our undergraduates of all levels, freshmen to seniors, and closely watch them grow into confident professionals. My experience in the classroom and beyond has been a very rewarding one and I look forward to many more years of teaching.

My courses have ranged from lectures to hands-on labs covering a wide range of topics from introductory material to advanced theoretical concepts. The opportunity to teach these courses multiple times has enabled me to hone and tailor my offering to suit the level of my students in the class. The end-of-the-semester evaluation of my courses by students and review of my teaching by my peers visiting my classes, has provided me with valuable feedback to continually improve my offering every semester.

As a computer science professional, I understand the importance of staying current in a constantly evolving field. To better prepare our students for the workforce or graduate school, I led the development of a new Data Analytics track and contributed to another new track, Computer Security, both of which were approved by the university senate. These tracks were chosen to align with high-demand areas in the industry. I was responsible for creating all aspects of the Data Analytics track, including the designing and offering of two new courses: Machine Learning and Data Analysis and Visualization and revitalized the third course, Database System incorporating advances in the field and all of these courses have been offered over the past few semesters. For the Computer Security track, I designed and offered a course in Cryptography. I actively participated in the approval process for both tracks through various committees at all levels of the university.

I have been constantly revising my courses to ensure student learning is maximized. Some examples of revisions include: introduction of a lab in the Computer Networks course, incorporation of Big Data concepts and projects in the Database course, and inclusion of research paper reviews in all 400-level courses. These changes were focused on bringing in a hands-on element in courses that are otherwise very theoretical. To ensure active in-class student participation and high attendance rates, I introduced pop-up quizzes in my class. From conversations with CS Department Board members, it was clear that students needed to be comfortable in working collaboratively in teams to succeed in industrial settings and accordingly in all my upper division courses, group projects are heavily emphasized, with a focus on peer-to-peer collaboration and communication. Also, I bring in practical examples to help students better relate to topics; for example, in my data analytics and machine learning classes I use publicly available data related to daily fields like cars, weather, and real estate. It is a real pleasure to hear directly from students that the above approaches are making them feel better prepared for internships and careers, as noted by one of our students (Eric Zair ’20) in his interview for SUNY Potsdam’s CS Web page (https://www.potsdam.edu/academics/AAS/depts/CS/Zair).

I’ve actively participated in University initiatives to bring new technologies to the classroom. Towards this end, I attended the Center for Creative Instruction workshop (Jan 2020)

and have been using some of the technologies introduced during the workshop to ensure teaching continuity is maintained during class cancellations because of weather or other reasons.

The pandemic time period (March 2020 to Dec 2021) was an intense period of learning and reflecting. In Spring 2020, when we had to transition to online courses at short notice and this meant that we had to quickly select software tools to teach, the mode of offering our classes, and change our courses to fit the new reality. For me, the transition to online was made smooth by my prior attendance at the CCI workshop in early Spring 2020, where new technologies for online education were introduced to us. I reasoned that asynchronous offering would be best for students and using my learnings from the CCI workshop, I designed weekly materials consisting of pre-recorded lectures, related short quizzes, and associated homeworks. Students were appreciative of this structure and seemed to like the flexibility in the schedule.

To help students with the lecture material and to allow for some face-to-face time, I had 3 hours of online office hours on all weekdays on *Discord* (Computer Science department server) for students to "stop by" and discuss any questions they had.

At the end of Spring 2020 semester, I looked back and realized that the asynchronous format was not ideal. Personally, the format felt distant to me, as I did not have much interaction with students, particularly with those students who were underperforming. For me, interaction with students was a key attraction to be a faculty member and this was missing in the asynchronous format. To address these issues, I switched to synchronous mode for my courses in Fall 2020. This change resulted in a semester that felt much more "normal", with regular student interaction and an ability to keep up with student performance on a regular basis. The feedback from students at the end of the course was also very positive for this mode of teaching.

In Spring 2021, I innovated by bringing in personalized assignments and exams in my cryptography course, so that the online offering of the course did not sacrifice student integrity issues that were of concern to me.

The pandemic years brought out the issues of equity in student-learning. While the online offering with access to recorded lectures and electronic office hours have benefitted some students, other students, have found the transition a bit challenging. Lack of tech equipment or being overwhelmed with stress associated with school and personal life challenged students unevenly. While we are now entirely in-person, the possible inequities amongst my students is not lost on me. In my interaction with students, I'm trying to be cognizant of these differing perspectives and challenges that students face and I'm always trying to be flexible in my dealings with them as much as possible.

The effort that I put into the courses is reflected in the mostly positive student evaluations that I have received and I was awarded the Favorite Professor Award by my students in 2020. I was also fortunate to have my peers sit in several of my classes and evaluate me and they were highly positive about my offering. I always carefully look through the feedback from my students and peers to see how I can improve and modify my teaching style/content.

As an educator, it is important to not only provide students with the material to learn, but also create the right environment for learning. I recognize that students have a range of identities, and comfort levels in expressing them, and hence have taken care to be respectful of their choices and preferences while making them comfortable in reaching out to me as needed. I have also made sure that students in my class are always respectful to each other and have an environment where discussion is welcome. This is reflected in how several students visit my office hours (a minimum of 6 hours per week) regularly and even stop by after hours.

Teaching reflections for individual courses are also provided in this portfolio for review.