

## Teaching Statement

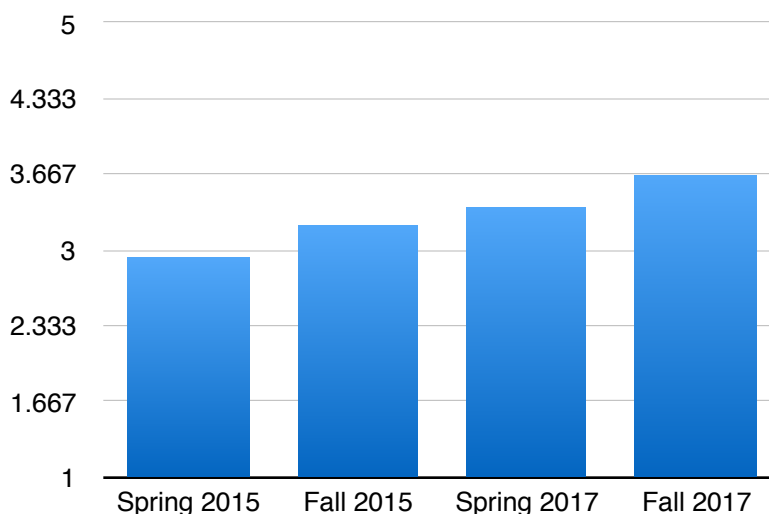
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Teaching is a unique profession, which provides the satisfaction of sharing one's knowledge and research experience with others as well as presents a lifelong platform for interacting with young minds full of enthusiasm, inquisitiveness, and fresh perspectives. I believe that teaching is not just a career path, but also a responsibility to be a mentor to the students and assist them in their academic endeavor.

I have taught both undergraduate and graduate courses, in the areas of parallel computing, compilers, and programming languages. To be more specific at W&M, I have taught graduate CSCI 652 — Advanced Compiler Construction, undergraduate CSCI 312 — The Principle of Programming Languages, and an interdisciplinary graduate-level course CSCI 780 — Multicore Computing.

I have designed these courses each with a different teaching style according to its level. For the entry-level undergraduate courses, inspiring students' interests is the most important. Such kind of courses should consist of interactive labs and interesting projects, which help students quickly get familiar with the discipline. For example, CSCI 312 consists of six projects. Among them, four are related to compiler construction and two are related to state-of-the-art programming languages. I have provided a Python-based framework for students to avoid spending time on irrelevant codings. Moreover, I provided test cases to help students check whether their codes are correct. For grading, I have used additional tests to guarantee correctness and fairness of the grading. I have listed the student feedback for CSCI 312 at the end of this statement, which shows that I have kept making improvement over teaching this course for four times. Figure 1 shows the improvement of the overall effectiveness scores.

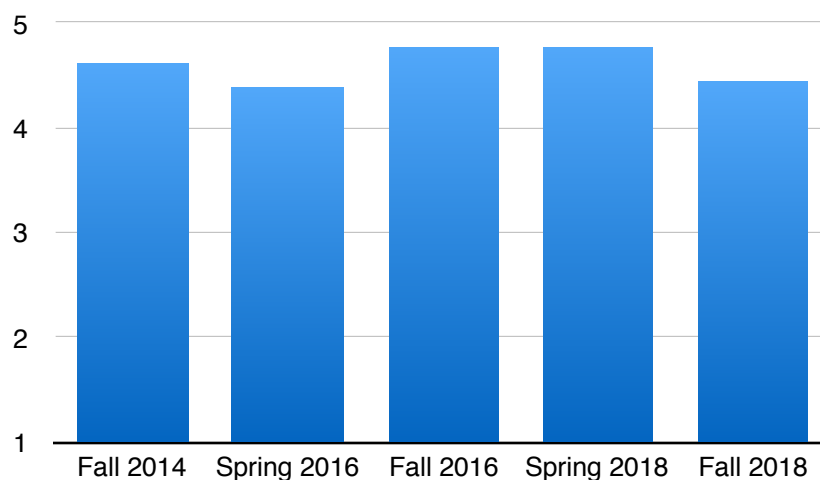
Figure 1. The overall effectiveness scores for CSCI 312.



I have learnt three lessons from teaching CSCI 312. First, CSCI 312 consists of theoretical analysis of different programming languages. I need to spend many efforts to help students follow my slides without losing any knowledge points. I find a good way is to raise questions all the time and ask students to write down the solutions on the blackboard. Second, as a heavy coding course, students often struggle with the coding assignments. I find that it is effective to sit down with students side-by-side and help them debug the codes, though it is time consuming. I usually split the work between myself and the teaching assistant (TA): I pinpoint errors at the algorithm level, while the TA handles the bugs at the code level. With this effort, students have done better jobs in the coding assignments. Finally, the first two CSCI 312 sessions (taught in 2015) did not show good attendance. For the later two CSCI 312 session in 2017, I have allocated a portion of grade points for attendance and assign in-class quizzes to motivate students to attend class, which significantly improve the attendance. I'll continue this strategy in the future.

For advanced graduate courses, I believe detailed lectures and challenging projects are the foundation of such courses. For example, CSCI 652 and 780 help graduate students learn the cutting edge of research areas in compilers and parallel computing. I have designed such courses in a unique way: I first give out first ten lectures on basic knowledge in textbooks. I then guide students to study foundational papers in these areas as well as innovative papers published recently. I supervise students to read and present these papers in class. This course design can both save students' time from seeking papers and enhance their understanding of these advanced topics. I believe that tailoring course designs for different experience levels can help me become an effective teacher. I have listed the student feedback for CSCI 652 and 780 at the end of this statement. The students have given good feedbacks on both courses, as shown in Figure 2.

Figure 2. The overall effectiveness scores for CSCI 680 and 780.



Teaching is not only an opportunity to contribute to the growth of young researchers, it is also the most effective method of learning. It is my firm belief that teaching refines my own understanding of the subjects and enable myself to look at the same issues from different perspectives, thereby helping me evolve as a teacher, and also as a researcher.

As for supervising students, I have nine students in my group. Seven of them (Shasha Wen, Probir Roy, Du Shen, Hao Xu, Qingsen Wang, Pengfei Su, and Bolun Li) are Ph.D. candidates, one (Wenting Tan) is graduated with a master degree, and one (Xiaonan Hu) is an undergraduate student. To be highlighted, I engaged Xiaonan Hu, an undergraduate female student in my research. I provided Xiaonan a strong letter for her Ph.D. application. She got an offer from Rice University, Duke University, and the University of Maryland at College Park. She was also selected for  $\Phi$ BK. In the future, I will continue to supervise more undergraduate students in my research group. Moreover, two of my Ph.D. students (Shasha Wen and Qingsen Wang) have received the Park Award from the Computer Science Department; Shasha Wen also received the George Healy Award from the College.

*CSCI652, Fall 2014*

Question	This Course				This Evaluation Form			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approachable for help?	4.88	5	8	0.35	4.07	4	535	1.14
How well was the instructor prepared for class?	4.75	5	8	0.46	4.37	5	537	0.86
How well did the instructor know the subject material?	5	5	8	0	4.63	5	537	0.67
Rate course difficulty compared to other W&M courses.	4.13	4	8	0.64	3.59	4	537	0.94
How would you rate this instructor's overall teaching effectiveness?	4.63	5	8	0.74	3.78	4	537	1.12
<b>Overall</b>	4.46	-	-	0.78	3.93	-	-	-

*CSCI 312, Spring 2015*

Question	This Course				This Evaluation Form			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approachable for help?	3.5	4	16	1.15	4.11	4	522	1.05
How well was the instructor prepared for class?	3.81	4	16	1.22	4.31	5	523	0.91
How well did the instructor know the subject material?	4.19	4	16	0.83	4.53	5	523	0.74
Rate course difficulty compared to other W&M courses.	3.31	3	16	0.7	3.5	4	522	0.88
How would you rate this instructor's overall teaching effectiveness?	2.94	3	16	1.24	3.87	4	521	1.07
<b>Overall</b>	3.4	-	-	1.12	3.95	-	-	-

*CSCI 312, Fall 2015*

Question	This Course				This Evaluation Form			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approachable for help?	3.39	3	18	0.98	4.19	5	595	1.15
How well was the instructor prepared for class?	3.89	4	18	0.9	4.32	5	594	0.99
How well did the instructor know the subject material?	4.22	4	18	0.88	4.62	5	595	0.73
Rate course difficulty compared to other W&M courses.	3.33	3	18	0.91	3.61	4	594	0.86
How would you rate this instructor's overall teaching effectiveness?	3.22	3.5	18	1.22	3.95	4	595	1.14
<b>Overall</b>	3.47	-	-	1.13	3.99	-	-	-

*CSCI 652, Spring 2016*

Question	This Course				This Evaluation Form			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approachable for help?	4.80	5.00	5	0.45	4.12	5.00	539	1.12
How well was the instructor prepared for class?	4.60	5.00	5	0.55	4.27	5.00	539	1.06
How well did the instructor know the subject material?	5.00	5.00	5	0.00	4.49	5.00	539	0.86
Rate course difficulty compared to other W&M courses.	3.60	4.00	5	0.55	3.53	4.00	539	0.87
How would you rate this instructor's overall teaching effectiveness?	4.40	4.00	5	0.55	3.79	4.00	539	1.24
<b>Overall</b>	4.46	-	-	0.68	3.88	-	-	-

*CSCI 780, Fall 2016*

Question	This Course				This Evaluation Form (CSCI)			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approachable for help?	4.78	5.00	9	0.44	4.35	5.00	546	0.95
How well was the instructor prepared for class?	4.89	5.00	9	0.33	4.36	5.00	548	0.94
How well did the instructor know the subject material?	4.89	5.00	9	0.33	4.64	5.00	549	0.70
Rate course difficulty compared to other W&M courses.	3.56	4.00	9	0.53	3.75	4.00	546	0.82
How would you rate this instructor's overall teaching effectiveness?	4.78	5.00	9	0.44	4.04	4.00	549	1.08
<b>Overall</b>	4.60	-	-	0.60	3.99	-	-	-



*CSCI 312, Spring 2017*

Question	This Course				This Evaluation Form (CSCI)			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approach able for help?	3.75	4.00	24	1.39	4.41	5.00	549	0.97
How well was the instructor prepared for class?	4.00	4.00	24	1.06	4.41	5.00	550	0.91
How well did the instructor know the subject material?	4.50	5.00	24	0.72	4.70	5.00	550	0.69
Rate course difficulty compared to other W&M courses.	3.71	4.00	24	0.75	3.65	4.00	550	0.86
How would you rate this instructor's overall teaching effectiveness?	3.38	3.00	24	1.17	4.15	5.00	550	1.06
<b>Overall</b>	3.77	-	-	1.18	4.15	-	-	-

*CSCI 312, Fall 2017*

Question	This Course				This Evaluation Form (CSCI)			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approach able for help?	3.71	4.00	24	1.16	4.46	5.00	667	0.89
How well was the instructor prepared for class?	4.46	4.50	24	0.59	4.58	5.00	665	0.71
How well did the instructor know the subject material?	4.58	5.00	24	0.58	4.74	5.00	668	0.57
Rate course difficulty compared to other W&M courses.	3.75	4.00	24	0.68	3.69	4.00	668	0.86
How would you rate this instructor's overall teaching effectiveness?	3.67	4.00	24	0.87	4.15	4.00	668	0.96
<b>Overall</b>	3.84	-	-	0.97	4.18	-	-	-

*CSCI 652, Spring 2018*

Question	This Course				This Evaluation Form (CSCI)			
	Mean	Median	Response Count	Standard Deviation	Mean	Median	Response Count	Standard Deviation
Was the instructor receptive to questions and approach able for help?	4.89	5.00	9	0.33	4.49	5.00	567	0.85
How well was the instructor prepared for class?	5.00	5.00	9	0.00	4.51	5.00	567	0.81
How well did the instructor know the subject material?	5.00	5.00	9	0.00	4.74	5.00	568	0.59
Rate course difficulty compared to other W&M courses.	3.89	4.00	9	0.60	3.70	4.00	568	0.82
How would you rate this instructor's overall teaching effectiveness?	4.78	5.00	9	0.44	4.16	4.00	568	1.02
<b>Overall</b>	4.67	-	-	0.54	4.15	-	-	-

*CSCI 780, Fall 2018*

Question	This Course				This Evaluation Form (CSCI)			
	Response Count	Mean	Standard Deviation	Median	Response Count	Mean	Standard Deviation	Median
Was the instructor receptive to questions and approachable for help?	11	4.73	0.65	5.00	578	4.38	0.95	5.00
How well was the instructor prepared for class?	11	4.82	0.40	5.00	579	4.39	0.93	5.00
How well did the instructor know the subject material?	11	5.00	0.00	5.00	579	4.66	0.75	5.00
Rate course difficulty compared to other W&M courses.	11	3.82	0.87	4.00	579	3.80	0.85	4.00
How would you rate this instructor's overall teaching effectiveness?	11	4.45	1.04	5.00	577	4.07	1.05	4.00
Overall	-	4.51	0.86	-	-	4.14	-	-