Teaching Statement

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For me, the most rewarding part of an academic career is having the opportunities to teach and mentor students. I have been fortunate to have many inspiring teachers, mentors, and advisors, and I am looking forward to inspiring new generations of students.

Teaching philosophy My goal as an educator is to teach students how to approach new problems and build the skills they need to solve them. Computer science and engineering is a fast-evolving area, so students should be taught about not only what existing solutions for historical problems are, but also how to come up with novel solutions for new problems. Through lectures, I describe the background of problems and use existing solutions as examples to demonstrate how to solve problems, then encourage students to criticize existing solutions rather than memorize them, and build up their own solutions. Through assignments, I encourage students to do hands-on projects, so that they can learn technical skills to solve problems. In addition, I will keep in mind to support students with diverse backgrounds and help them achieve their own career goals.

Teaching experience At Purdue University, I was invited to give multiple guest lectures for graduate courses. I talked about modern memory systems in *ECE695-1 Operating Systems Design and Implementation* and modern stream analytics systems in *ECE695-2 Modern Datacenter systems*. In our research group, I gave more than twenty lectures to our group members, and I have covered a wide range of topics, such as serverless computing, non-volatile memory, RISC-V, AutoML, reinforcement learning, key-value store, etc. My major responsibility in courses and lectures lays in summarizing the state-of-the-art materials, making slides, and teaching students and group members. In addition to classroom/group experience, I also gave talks on my research many times in conferences and research institutes, such as the International Workshop on Mobile Computing Systems and Applications (HotMobile 2016), 2017 USENIX Annual Technical Conference (USENIX ATC 2017), and ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2019), Purdue ECE Seminar, and Microsoft Research.

Mentoring experience As a mentor, I encourage students to be independent and creative in their work and I provide guidance to ensure they are on the right direction. For junior students, I will give more detailed guidance. As they become more capable, I will give them more freedom to define their own research directions and agendas with my high-level guidance. During my Ph.D., I had the chance to mentor Victor Pan, an undergraduate of Purdue, to do research with the support from my advisor and Purdue Summer Undergraduate Research Fellowship (SURF). I helped him port the implementation of hash join algorithm from a machine with AVX-256 to a machine with AVX-512, which involves low-level SIMD intrinsics programming. In addition to research, I also would like to help with students' life and mental health. During my Ph.D., I was a mentor of Purdue eMentoring Program. I was paired with Jackson Anderson, a first-year Ph.D. student, and I gave him a lot of guidance and advices about his Ph.D. life.

Future Teaching Given my research background and experience, I am most qualified to teach courses on operating systems, computer architecture, data structures, and systems programming. I'm also interested in developing a new graduate level course at the intersection of computer systems and machine learning.