

I am fortunate to have had several great teachers who went beyond textbooks and gave lectures and projects drawn from the real world. I find that getting hands-on experience building real systems is not only motivating, but also builds deeper understanding. This is the kind of experience that I want to give students.

Teaching Experience: As a graduate student at KAIST, I served as teaching assistant for several undergraduate courses: Distributed Algorithms and Systems (CS443), Algorithms (CS300), Computer Networks (CS341) and Introduction to Programming (CS101).

Teaching Approach and Philosophy: My own experiences in school and industry have led me to believe that students are more motivated and experience deeper learning when they can develop and test their own solutions to problems, and interactively discover the pros and cons of various approaches they try.

I believe industry is a great source of real-world problems to draw from to motivate students. While I was working as a teaching assistant for distributed algorithms and systems courses, my advisor decided to give an assignment using Hadoop for large scale data processing. This was back in 2008, when Hadoop was in its infancy and new to many people. This assignment motivated many of the students to learn and use distributed systems, and gave them a tool they could leverage. Many of the students came up with their own term projects using Hadoop to solve various problems. As this example taught me, many problems that industry faces in computer systems and networking can be used in the classroom - and I believe I have the experience to do it.

I also believe that giving opportunities for students to explore their own ideas can create a great synergies between research and teaching. Many research problems have facets that can be spun off into classroom projects where students can be creative. For instance, protocol design contests [1] are a proven example of this idea that inspire me. I want to design course projects that expose students to the state of the art in research and give them opportunity to design and evaluate their own solutions.

Future Teaching Area: I would be excited to teach introductory through graduate level courses on networking, operating systems, and distributed systems.

References

- [1] A. Sivaraman, K. Winstein, P. Varley, J. a. Batalha, A. Goyal, S. Das, J. Ma, and H. Balakrishnan. Protocol Design Contests. *SIGCOMM*, 44(3), July 2014.