# Teaching Statement

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In my pursuit of becoming an academic researcher, my profound passion for teaching and its inherent potential is unwavering. This fervent devotion to education is a direct result of my personal journey as a student, shaped by years of receiving lectures and mentorship from exceptional professors. Moreover, my role as an instructor and mentor, engaging with engineers, undergraduates, and graduate students, has significantly influenced and refined my teaching ethos. Central to my teaching philosophy is the understanding that education is a collaborative voyage. Anchored in this belief, my mission is to cultivate a vibrant and all-encompassing learning milieu, fostering empowerment in students to evolve into perpetual learners and discerning critical thinkers.

## 1 Teaching Philosophy

During my doctoral studies, I had the privilege of working as a teaching assistant for both undergraduate and graduate courses, collaborating with esteemed professors over two semesters. I gained valuable insights from these experienced educators, blending their expertise with my own student perspective to craft impactful lectures.

My teaching strategy is founded upon three core principles. Firstly, giving students a succinct overview at the outset of a course is vital. This encompasses introducing the foundational background, outlining the bigger picture, elucidating the approaches, and elucidating the main goals for successfully comprehending the course content. This initial orientation equips students with a clear sense of their starting point, the path they need to traverse, and the ultimate destination of their learning journey. Secondly, I advocate for a robust understanding of the subject matter by fostering interconnectedness among the knowledge acquired. Drawing from my own experience, I recognize that forming connections between various pieces of knowledge accelerates learning. Consequently, during each lecture, I weave the new material into the existing knowledge framework, not restricted to the specific course. This approach cultivates a deeper grasp of the subject, enriching students' perspectives and broadening their insights. Lastly, recognizing the significance of methodology in computer science, I extend beyond the confines of textbook content—concepts, formulas, algorithms—by delving into the underlying principles and methodologies that govern them. This approach, which encompasses situating these concepts within their broader context, promotes a more profound comprehension. I t equips students with the capacity to apply their understanding to real-world problems flexibly and elucidates the distinctions among interrelated concepts.

Moreover, I firmly prioritize infusing my teaching with energy and enthusiasm, particularly during the presentation of course materials. I hold the belief that enthusiasm in the classroom is infectious; a passionate lecture captivates students and fuels their engagement. I actively encourage participation by posing thought-provoking questions and motivating students to contribute their inquiries. To optimize the impact of these questions, I meticulously prepare notes in advance, delineating optimal moments and relevant topics. Similarly, I adeptly guide student-generated questions to align seamlessly with the lecture's focus and timing.

In conclusion, my teaching philosophy is guided by the principles of providing clear starting points, fostering interconnected learning, and delving into the underlying foundations of the subject matter with enthusiasm and active engagement. By embedding these principles into my pedagogical methods, I aim to create an engaging and enriching educational experience that equips students with not just knowledge, but also the tools to navigate the complex landscape of computer science.

## 2 Mentoring Strategy

In the initial stages of my career, I undertook the responsibility of a team lead, overseeing management and mentorship for a team consisting of ten software engineers. Over the subsequent eight years, my journey led me to roles as a team technical lead at both ZTE and Huawei. In these capacities, I spearheaded initiatives while offering direction and mentorship to a sizeable cohort ranging from fifteen to thirty adept software engineers. During my pursuit of advanced education, I assumed the role of mentor to a diverse range of students. I provided guidance to two REU students, each of whom embarked on distinct research projects. Additionally, I extended my mentorship to a

master's student and a junior Ph.D. candidate, leading them through research undertakings that were tailored to their individual academic journeys. This inclination toward mentoring was further manifested in my role as a teaching assistant, where I engaged with students at varying academic levels. My support extended to both undergraduate and junior graduate students, as I facilitated their learning during designated office hours.

I tailor my mentoring to each person's background, focusing on their self-motivation and cognitive abilities. For those who think independently, I offer high-level guidance, letting them shape research questions and solutions. If someone excels in tasks but needs more ideas, I provide specific concepts and closely track their progress. Open dialogue is central to my approach. I urge mentees to share thoughts and questions, guiding them to solutions rather than giving instant answers. I emphasize teaching methods for finding solutions, particularly for those new to certain tools or domains. This method has succeeded, as students value the focus on learning. Beyond regular meetings, I provide extra time and flexibility, ensuring quick help and accommodating more discussions. My dedication springs from my experiences as a student with exceptional mentors, molding my commitment to excellence. Feedback is crucial; I refine my approach based on mentees' insights. My mentoring style is marked by respect, humility, and friendship, all contributing to fostering students' growth and development.

# 3 Teaching Interests

My doctoral research was profoundly centered on software engineering and programming languages, with a particular focus on program analysis, the security aspects inherent to multi-language software, and their corresponding hosting language runtimes. This academic pursuit has deepened my expertise and ignited my fervor for sharing these intricate subjects through teaching. Given this academic background and expertise, I am particularly enthusiastic about guiding students in both undergraduate and graduate courses. At the undergraduate level, I am well-prepared to deliver courses such as Software Engineering, Programming Languages, Compilers, and Data Structures. My proficiency extends to the graduate level, where I am eager to engage in courses like Software Testing, Program Analysis, and Computer Security.

Furthermore, my pre-PhD tenure in the industrial sphere, spanning over a decade, revolved around networking and embedded software design and development. This industry experience uniquely equips me to offer undergraduate courses in Computer Networks and Operating Systems, enriching the learning experience with practical insights.

My extensive professional journey encompasses roles ranging from developer to team leader and technical leader across diverse software industries. This hands-on immersion has given me a profound understanding of building real-world systems, a vantage point that significantly enhances my teaching approach. I've witnessed how this practical knowledge resonates with students, fostering dynamic lectures and fruitful mentoring experiences.

# 4 Conclusion

My passion for teaching is rooted in the profound satisfaction of imparting knowledge to students. Beyond sharing my current expertise, mentoring allows for a reciprocal exchange of ideas and insights. This dynamic collaboration enriches their learning journey and allows me to expand my horizons continually. The reciprocity of learning and teaching is an invigorating cycle that fuels my enthusiasm for education. I eagerly anticipate the prospect of further enriching the academic landscape with my dedication to fostering understanding and growth among students.