Teaching Statement

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At its core, my pedagogical philosophy centers on dynamic communication and the deliberate cultivation of scholarly independence. I view teaching as a continuous intersection of communication and performance. Effective instruction requires more than the mere transmission of knowledge; it demands an engaging, intentional delivery that brings complex ideas to life. Yet, this performance must always remain a two-way dialogue. I view continuous student feedback not just as an evaluative metric, but as an essential, real-time mechanism for calibrating my instructional strategies and ensuring the material deeply resonates with my audience.

This communicative foundation seamlessly extends into my approach to advising, where my ultimate goal is to equip students with the resilience and acumen required to thrive in the academic landscape. My mentorship model relies on strategic scaffolding. In the early stages of a student's research journey, I provide intensive, hands-on collaboration to establish a strong baseline of scholarly rigor and methodology. Once this foundation is secure, I deliberately transition to a more advisory role. By entrusting students with the autonomy to explore, make executive decisions, and navigate academic challenges independently, I empower them to evolve from guided learners into fully self-directed, confident researchers.

Classroom Teaching

Over the past five and a half years at Peking University, my teaching portfolio has spanned foundational undergraduate mathematics and advanced graduate-level computer science. Following a standard first-year teaching exemption, I have maintained a consistent teaching load, averaging 97 contact hours per year. This experience has allowed me to adapt my communicative teaching philosophy across distinct levels of student expertise, from large introductory lectures to specialized graduate seminars.

Foundational Undergraduate Instruction. I have instructed over 400 undergraduate students across two core mathematics courses: Algebraic Structure and Combinatorial Mathematics and Introduction to Discrete Mathematics. Because these subjects require rigorous, abstract thinking, they are traditionally challenging for students. In these environments, my view of teaching as a dynamic performance is highly practical. I structure my lectures to demystify dense mathematical constructs, breaking down complex proofs into accessible steps. Recognizing the difficulty of the material, I rely on continuous student feedback—both through formal channels and real-time classroom dialogue—to calibrate my pacing and ensure the foundational concepts are clear.

My experience teaching Introduction to Discrete Mathematics exemplifies this commitment to iterative, feedback-driven improvement. This course presents a unique pedagogical challenge due to its sheer breadth, covering set theory, number theory, graph theory, combinatorics, algebraic structures, formal logic, and computational models within a single semester. During my first year, I utilized inherited presentation materials to navigate this vast content, which resulted in a passive, slide-heavy delivery. Student evaluations candidly reflected that this approach felt disjointed and lacked the active guidance needed for such dense material. Treating this feedback as a critical metric, I completely restructured my pedagogical approach for the second year. I redesigned the slides to display only high-level concepts and shifted the detailed mathematical proofs to the whiteboard. This transition from passive reading to an active, real-time performance made the logical progression much clearer and was highly rated by the students. Building on this success, by the third year, I further refined the lectures by integrating challenging, open-ended questions designed to actively stimulate independent analytical thinking.

Graduate Education and Curriculum Design At the graduate level, I designed and introduced Introduction to Probabilistic Programming. As the first course dedicated to this subject in China, it bridges a critical gap in modern computer science education: the intersection of programming languages and machine learning. As AI and ML take on increasingly important societal roles, developing high-quality systems in conventional languages has become notoriously difficult due to a lack of built-in support for probabilistic models. To address this, I guide students through how probabilistic programming uses expressive constructs to handle random variables and construct arbitrarily complex models. The curriculum covers

representative languages, underlying theories, classical graphical models, inference algorithms, and the latest frontiers being explored by leading global research institutes. In this specialized, advanced setting, my instructional approach naturally shifts from large-scale lecturing to facilitating high-level, interactive discussions, seamlessly bridging the gap between theoretical foundations and cutting-edge practical research.

Student Advising and Mentorship

Over the past five and a half years, I have built a vibrant research group, currently advising eight Ph.D. students and having co-advised two Master's students to graduation. I am incredibly proud of their academic momentum and early-career success. Although my Ph.D. students are still in the process of completing their degrees, six of the eight—excluding only the two most junior members—have already published at least one paper in a top-tier conference. For instance, Yifan Zhang, a third-year Ph.D. student, has established an outstanding publication record, including a first-author paper at POPL, a first-author paper at OOPSLA, and a second-author paper at OOPSLA. Furthermore, both of my graduated Master's students successfully published their research, with one securing a paper at POPL and the other at SAS. This consistent track record of publication in highly competitive venues is the direct result of an intentional mentorship framework designed to foster both rigor and autonomy.

My approach to graduate advising is driven by the belief that my primary responsibility is to equip students with the skills necessary to survive and thrive in the competitive landscape of academia. I structure my mentorship as a deliberate transition from guided apprenticeship to complete research independence. When a student begins their first project, I take a heavily hands-on approach. I collaborate closely with them on every aspect of their first paper, from identifying the core research problem and designing the methodology to structuring the arguments and refining the academic writing. This intensive partnership ensures they build a practical foundation and internalize the rigorous standards expected in top-tier programming languages venues.

Once this baseline of research maturity is established, my role intentionally shifts. From a student's second paper onward—as demonstrated by the prolific output of my more senior students—I step back and transfer the majority of the project's ownership directly to them. I believe it is crucial for their intellectual development to have the freedom to explore new directions, make executive decisions, and learn how to independently navigate the inevitable roadblocks of the research process. While I remain continuously available as a sounding board, the students become the primary drivers of their work. By fostering this environment of autonomy and exploration, I aim to graduate scholars who have not only found their own distinct academic voice but are fully prepared to lead independent, impactful research careers.

Conclusion

Ultimately, my core objective as both an educator and a mentor is to demystify complexity and empower students to confidently navigate the academic landscape. Whether I am translating abstract mathematical proofs on a whiteboard for undergraduates or guiding a Ph.D. student through the rigorous peer-review process of top-tier programming language venues, I approach education as a dynamic, continuous dialogue. By prioritizing real-time feedback in the classroom and intentionally scaffolding research independence in my lab, I strive to create environments where students do more than absorb knowledge—they learn how to independently create it. As I look to the future at Peking University, I remain deeply committed to refining my pedagogical practices, advancing our curriculum in emerging areas like probabilistic programming, and cultivating the next generation of resilient, innovative scholars.