Teaching And Mentorship Statement

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My teaching experience spans a variety of activities across my time at UCSD. I've been a teaching assistant for several professors at my institution, including my advisor Sorin Lerner, Ranjit Jhala and Nadia Polikarpova, on both undergraduate and graduate programming language classes. I've also mentored multiple students, including advising an REU for a student at Howard College, advising the masters thesis of a student at HSE, and working with a younger graduate student on my own work on machine-learning systems for proof synthesis. I particularly enjoy the challenge of breaking down concepts to be understood in a wide audience, whether they're concepts in my own research, or foundational concepts of computer science.

During my time teaching, I've consistently found office hours were one of my favorite parts of the job. The opportunity to work with students one-on-one allows me to tailor my teaching approach to the students learning abilities, ability to explain a concept to a student in a way that got them excited about it has always been immensely satisfying. As I gathered more teaching experience, I tried to apply the effectiveness from office hours to the more challenging task of teaching many students at once with the same material. Knowing that each student would absorb the material in a different way, I've always strived to allow multiple paths through the material I'm teaching, whether that means reflecting each thing I say with an onscreen diagram, or presenting multiple metaphors for each core concept.

As someone who works in a field that deals so much with abstraction, it can be counterintuitive how important concretization is for teaching core concepts. While the power of abstractions like Monads lies in their flexibility, I think that when teaching them, that flexibility can often be a distraction. Instead, students often benefit from seeing concrete examples of how core concepts work, that they can relate to programming problems they understand. Alongside the fully abstract version of the concept, these concrete examples can go a long way to maintaining student interest an engagement in topics that help their long term growth as programmers and computer scientists.

I'm looking forward to mentoring students both in classroom and research environments as a university professor. I would like to teach classes spanning from basic introduction to computer science, to advanced Programming Languages and compilers, program synthesis, and verification. I'm also excited to explore teaching where needed in my areas of adjacent expertise, such as basic numerical analysis. I look forward to working with my colleagues to constantly explore and adapt our curriculum to an ever changing environment, and provide students with the best education possible.