

Ian Kelley

Teaching Statement

I believe that teaching is an important aspect to a professorial job. Teaching not only helps to educate the next generation of computer scientists, but also provides an additional forum for educators to keep abreast of the latest computer science developments and research. I see teaching not only as a way to provide an encouraging and supportive learning environment for students to acquire marketable skills, but also as an excellent opportunity to engrain the skills needed for problem analysis and critical thought. It is my belief that much of what makes a good computer scientist isn't the specific knowledge one possesses, although that is a critical basis for any solution development, but rather the ability to locate and distill information into useful forms that can be applied to the target problem domain. As an educator, I would especially be interested in working with students to provide them with both the concrete knowledge they will need to succeed, but also with the analytical tools and inquisitive mindset to ask the pertinent questions.

During my time at Louisiana State University, and also at Cardiff University, I was directly responsible for several undergraduate and graduate students who worked for and with me. I helped to mentor many of them, both by answering questions and also by showing how I go about finding answers myself. If possible, I show my thought process and how I approach a particular solution and derive answers. At LSU, I was responsible for several students who worked for me developing portal solutions. Within the group, I identified students' individual strengths, and assigned tasks that most suited their expertise and interests. I encouraged the graduate students to develop their own solutions, and gave them the leeway to find new research topics within their assigned work. I wanted them to do well and took pride in their achievements, especially as they become adept at new technologies and more self-motivated and capable when searching for solutions. When new research was performed, I encouraged them to submit papers to conferences and workshops, both as a way to gain a travel award for their hard work, but also to garnish other opinions and become involved in the peer-review process.

Although I have experience mentoring and supervising students, to a large extent, my career so far has focused on research. I have not yet been able to fully explore teaching as much as I would like. I have, however, had a chance to guest lecture on distributed computing at LSU, as well as run labs and give tutorials at both LSU and Cardiff University. I certainly enjoy the teaching and mentoring aspects of academia, and believe it is an important and integral part to any successful academic position.

I have given many talks at workshops, conferences, and project reviews. I feel secure in my ability to convey my message to whatever the target audience, with the appropriate technical level. I would certainly feel confident teaching classes on programming languages, distributed computing, and new emerging technologies (e.g., Cloud computing and Web services). I would also like to broaden my knowledge and my own expertise by taking on teaching roles in other subject areas.

I have identified the following courses as within my areas of expertise:

- Programming and Scripting Languages
- Object-Oriented Program Design
- Software Development – Design Patterns, Methodologies
- Computer Hardware and Operating Systems
- Internet Computing (Web services, XML, Cloud computing)
- Advanced Software Engineering
- Computers and Society courses (ethics, influences)
- Data Management/Security

In addition to the above list, I would be interested in teaching a course on networking with a hands-on programming component. I believe the nature of networking technologies makes it an excellent area for showcasing many computer science fundamentals and components, such as data management, design, and security. Getting students involved in developing interactive tools such as P2P chat applications and games, engages other students, provides a way to easily separate individual components and responsibilities, and can be a good way to showcase the fun and power of computer science.

On the same tangent, I am interested in mobile application development, and see the development of the mobile domain and ad-hoc networking as a potential continuation an OO Java programming track. Lastly, I would be interested in exploring classes with an open-source software development component, as well as introducing and Unix other differing operating systems and environments. I see working as a faculty member to be a great opportunity and forum to expose students to the broader world of systems and design, giving students the knowledge, experience, and self-confidence to pick the best-fit tool and environment (or develop a completely new one) for their future tasks and ideas.