

I have always loved to learn and naturally felt at home in academia. When I started my graduate studies I wasn't aware of the integral role that teaching would play in my personal and professional growth. Luckily, Indiana University provided an environment that exposed me to many different facets of teaching early on. A fire was sparked and led me to progressively seek out more challenging teaching opportunities. I worked as a teaching assistant, co-instructor and instructor of record for undergraduate, graduate and online courses. I enjoy the process of planning, organizing and delivering material and I consider being an passionate educator a core trait of the faculty member I strive to become.

### Teaching Experience – What I've done:

For my very first semester as a graduate student (I had just arrived from Germany) I was assigned as the teaching assistant for a graduate-level course on *scientific computing*, a subject area I would not have considered myself to be an expert in back then. While terrifying at the time, in retrospect I am glad that I was forced out of my (teaching-) comfort zone so early. Teaching any subject means continuously learning about the subject, and the realization that I could be a learner and still be a helpful resource to my peers was very encouraging to me as a fresh graduate student. For the next semester the same professor chose me as the TA for the undergraduate version of the course. Being considerably more relaxed, I was given the opportunity to design my own homework problems. This was the first time I noticed the challenge and the fun of thinking about problems from the perspective of a teacher.

During the next two semesters I was part of the larger teaching staff for *C211 - Introduction to Computer Science*, which is IU's main introductory course for potential CS majors. Working for *C211* stood out for me in two significant ways: logistics and student impact. *C211* involved handling several hundred students who were divided into two groups for lectures and around 10 groups for weekly programming labs, all having weekly homework assignments. It was the first course I was involved in where the sheer logistics of keeping everyone (students and staff) on track required as much commitment and time as it took to design labs, correct homework, and provide office hours. I learned that I am also quite competent at aspects of managing a course that are not directly about teaching, to the extend that I was given the role of lead teaching assistant during the second semester, when the course was taught by a new instructor who was less familiar with the course logistics. *C211* had an enormous impact on students, which was fascinating to be a part of. It was no easy course and for many it was their first taste of programming. Seeing students go from skeptical freshmen to excited CS majors was an immensely gratifying teaching experience.

In my first semester as a postdoc, I was the co-instructor for *B551 - Elements of Artificial Intelligence*, a popular graduate-level CS and data science course attended by around 100 students. In rotation with my advisor Prof. Crandall, I prepared and held around a third of the lectures. I never had problems speaking in front of a large audience, but it wasn't until then that I realized how much I enjoyed the almost theatrical aspect of lecturing, like designing and performing a play. In parallel, I was the instructor of record for the online version of the course, which was offered for the first time. I was given full freedom on how to design the class under the overall goal of creating a student experience that was similar to the "real" course in depth, challenge, and time commitment. Together with my advisor, I recorded custom and interactive video versions of every lecture. I also worked closely together with the University's eLearning team and made sure that all online students had access to multi-user video office hours and a shared message board with the residential students. In addition, I coordinated the participation in a successful pilot study to cooperate with an online proctoring service during the course's final exam.

I have given various guest lectures at IU throughout the years, primarily in courses related to computer vision. As a postdoc I was invited to give a two-hour special lecture on machine learning at the *Naval Surface Warfare Center (NSWC)* in Crane, Indiana.

### Feedback – What others say:

A big part of what encourages me to follow teaching as a career is the positive feedback I have received from others, especially students. For *C211*, where I taught labs and provided help in offices hours, students had the chance to evaluate their teaching assistants anonymously and wrote comments like "Great instructor, always willing to help and give advice. Never talks down to students. Makes sure the students understand,"

“Friendly, quick and to the point, but still very clear. Very capable,” “Sven is very patient and willing to help his students. He is a good instructor”, “He’s a cool dude. Imitates Germans very well.”

Teaching and organizing an online course, as I did for *B551*, is unique in that students work from around the world and student contact is almost never in person. It was important to me to still be reachable and find ways to effectively provide feedback online, which students appreciated in their reviews: “Timely and substantial comments and replies, easy logistics around the course, good online videos.”

I have also received supportive feedback from faculty and peers. After giving an invited lecture at the *Naval Surface Warfare Center*, the chief engineer emailed me to say “I wanted to sincerely thank you for kicking off our lecture series yesterday. I knew you’d give a great talk and you exceeded my high expectations. I especially appreciate the tailored content.”

### Teaching Philosophy – What I’ve learned:

Reflecting back on the experiences I could collect so far, I find the following qualities to be most crucial and indicative of the educator I strive to be:

- **Be energetic.** My default presentation style is very enthusiastic. Students usually adapt to the energy level of the instructor and lose their fear of engaging in the class. I found that a careful dose of self-deprecating humor helps to not come off as too intimidating.
- **Be prepared.** Even for established lectures, I always try to prepare myself by recalling why the material is important, what the main message is, and how we are going to get there. This helps me and the class to stay on track and makes it easier to judge how much time and depth to allot for questions and discussions.
- **Know your audience.** Teaching the same subject can look very different depending on your audience. Typically students are very susceptible to whether the instructor is aware of their background and how it relates to the subject matter. I always try to tailor a lecture (or talk) towards my audience.
- **Be fair and relatable.** It is not in my nature to look down on students or put myself on a pedestal. While maintaining a clear hierarchy is important, I much prefer to create an atmosphere where everyone is eager and willing to learn from each other. For example, I found that creating randomly-assigned small groups for assignments early in the semester (with the option that students can form their own teams later on) often helps to prevent that “front row” and “back row” students stay among themselves.
- **Be organized and clear.** A well-organized course drastically reduces the average stress level of the teacher and the students. This includes communicating early and clearly how the course is structured, what is expected from the students, when and where they can find help, and how they get evaluated.
- **Be responsive.** I try to be very responsive to students outside of the classroom which can be challenging as different students favor different means of communication. I found that modern online forums (e.g. *Piazza*) can be incredibly helpful at centralizing questions and discussions. Students tend to be sensitive to the online presence of an instructor and feel encouraged to engage with their own answers or thoughts.

Ultimately, I know that no two courses, students or institutions are alike and that my past experiences can only hint at my future teaching. However, I also believe that I have learned to be adaptive and flexible and I will strive to create the best learning environment in any scenario I’m in.

### Conclusion

I truly enjoy teaching. I have a diverse experience in teaching and organizing undergraduate, graduate and online courses. Whether it’s a lecture, an online discussion, or office hours, I am prepared and mindful of my audience, their level of understanding and their needs. The feedback I have received so far largely suggests that students see me as a friendly, clear, and capable instructor. While I’m only at the beginning of my teaching career, I have done well when given the chance and I am excited to have more opportunities to prove myself in the future.