According to Albert Einstein: "*Education is what remains after one has forgotten what one has learned in school*". I believe that the most effective method of instructing students at the University level is to present them with more than lectures, lessons to learn, and straightforward projects; an instructor has to move beyond the traditional model of schooling to a point when learning becomes a personal experience.

Students enrolled in undergraduate and graduate courses are just a few steps away from their professional careers. Preparing them to succeed in their respective competitive environments is one of my priorities, by teaching them to be critical thinkers and effective problem solvers. To reach this goal, I use various methods to engage and stimulate the students, such as open discussion, hands-on exercises, individual and collaborative projects targeted at the individual student's interests, readings and guest lectures. I strive to develop an interactive environment where the students are highly encouraged to participate and discuss ideas. In alignment with my research philosophy, I believe that expressing individual opinions and receiving feedback about these opinions are an important part of the learning process. As the students actively participate, they get involved and engaged, thereby adapting the proffered knowledge in a personal way. This is the exact point where the passive state of 'being instructed' turns into the active state of 'personal experience'.

I have a strong teaching record in Computer Science: during my PhD, I gave courses on various aspects of the discipline, including computer graphics, graph theory and programming, at all levels of undergraduate studies. Yet, my most enriching, interesting and challenging experience as an instructor was during my postdoctoral fellowship at OCAD University, where I have had the opportunity of teaching two elective courses to artists and designers enrolled in the new Digital Futures graduate program.

I co-taught the *Data Visualization* class with Patricio Davila, a professional designer and former instructor at the DFI. As a computer scientist who is an expert in the field, I found it extremely enriching to discuss and build the class in collaboration with Patricio, an expert in the same topic but with an art and design background. Teaching to artists and designers, an audience that I was not familiar with, required me to re-think my approach of communicating knowledge. Our challenge as co-instructors with different backgrounds was to leverage our complementary expertise by composing a coherent course that keeps a good balance between the rigor, theory and method characteristic to computer science, and the technique, creativity and discourse that are the core areas of the design discipline. Our efforts in designing the class were very fruitful, as the class was very well received by students. From the first cohort we received positive feedback and also a lot of ideas on how to improve the class. One of the students reported in the post-course survey: "*My knowledge of theory is better, my appreciation for the craft and scope is immensely grander than before, and I love the topic more than ever. Should this be offered again and better feedback systems introduced, I think future students would continue to benefit from the content and from Fanny and Patricio's knowledge and experience.* "

Beside the Data Visualization course, I created a joint UofT/OCADU course, co-taught with Karan Singh, Professor in Computer Graphics at the DGP lab. This project, reflecting my commitment in tightening the relationship between computer scientists and graphic designers, has allowed me to put into practice my skills as a mediator between the two communities. All students were very excited about the idea of gathering together designers and computer scientists. They developed particularly impressive class projects, some of which even lead to research paper submissions in major conferences in computer science and design such as *SIGGRAPH* and *Designing Interactive Systems*. A student in design reported that "*knowing the technology behind the software we use frequently and the cooperation with interdisciplinary background members*" were part of the strengths of the class. Others said "*The class was very great, in a fun format, allowing you to learn many things from different aspects*" and that they highly appreciated that they had "*a lot of freedom for your own project and idea.*"

Even though this class showed to be an enriching experience for all involved, we faced many challenges creating and teaching it. Indeed, it is not easy to find content that is suitable for an audience with widely different backgrounds. Despite the difficulties, I consider this experience a full success. I am a passionate, ambitious and careful educator, who seeks to offer novel and high quality instruction. I believe that one learns through collaboration, experimentation, success and failure and my role as an educator is to always remain a learner and experimenter myself. The creation of new outcomes and fresh ideas is not possible without several attempts and iterations to improve and refine the content and format of a class. This process has to occur with the help of the students, since all the teaching theory can only be evaluated when put into practice. I recognize and strongly value the role of students as collaborators in such a process and consider them as the best critics to give me feedback on how to improve my teaching content and practice. I deeply believe that anything is

possible as long as an honest and respectful dialogue is established with the students. My practice involves regular meetings with each student, during which I provide personal guidance if required, and gather feedback that serves to adjust my class to better suit the students' needs. This reciprocal process has always been immensely informative and beneficial, especially in the case of this pilot project in cross-disciplinary areas.

One aspect of teaching that I find most exciting is the opportunity we have to share with students ideas, experiences, and explanations that we may have spent years uncovering. One of the most fulfilling facets of teaching is probably the satisfaction that I feel when I see a student "get it". In my experience, students express pride and joy when they succeed, and thus one of my favorite exercises is to ask a student to explain the idea or problem to the rest of the class. Not only does it improve their communication skills by stepping into the teacher role, but it also makes the explanation more entertaining for the class, and maybe even more impactful or understandable than if I had lectured about it. Learning is something that is supposed to be fun for all concerned. I therefore try to inject not only humor and discussions into lectures but also make projects fun and enjoyable, yet challenging, for the diverse interests of the students. I want my students to entertain themselves within the material in my course and therefore I need to give them a reason to come to and be fully absorbed in the course. In this way I hope to spark the same flame of excitement when learning about a topic that I have for the topic.

Nevertheless, not all students have the same learning style, encounter the same difficulties, or find the same idea interesting. I have always taken each individual's experience as one more resource for making my courses richer and even more interesting. Instead of giving solutions, I ask provocative questions to encourage the students to think by themselves, and I ask them to dare to share their thoughts, even if they think they are wrong, or outside-of-the-box. I vividly credit each contribution, and recall frequently that mistakes can often be as useful a lesson as a success. I always take student contribution as an opportunity to open a discussion, thereby familiarizing my students to critical thinking. I believe in trusting my students, and my mission is to make them trust in themselves. Some of my students that start out the quietest often are revealed to be the most active participants, as they gain in self-esteem and self-confidence.

I also have a broad experience in mentoring students in their research. I am mentoring several PhD students at the Digital Graphics Project Lab at the University of Toronto, and graduate and undergraduate students at OCAD University. The latter are Research Assistants at the Centre for Innovation in Information Visualization and Data Driven Design. Although the approach is different than teaching a class, I follow the same strategy of giving the students as much responsibility and freedom as they can handle, while providing them with all the guidance they require as young researchers. Five research papers co-authored with students under my supervision have already been published in major conferences such as ACM CHI, IEEE Infovis and Designing Interactive Systems since my arrival in Toronto two years ago.

Beside my teaching service, I usually volunteer and take part in activities related to my teaching. During my years as an instructor in Computer Science, I helped in the process of recruiting students, as well as discussing and composing new programs with the teaching team at the Department of Computer Science of the University Institutes for Technology in Bordeaux. Currently, I am a member of the DFI Graduate Studies Program Committee and therefore I closely follow and contribute to the creation and improvement of the new program. I have also served on the recruiting committee of the newcomers in the program.

With my background in computer science and recent experience giving interdisciplinary courses to computer science and design students, I am prepared to teach introductory and advanced courses in Human-Computer Interaction, Data Visualization, Human Factors, User Interface Design, Computer Graphics and programming. In addition, below are some ideas for additional courses I would be excited to offer in the DFI Graduate program:

> *Tangible Interfaces* - Tangible interaction specializes on interfaces that are in some way physically embodied. It spans a variety of perspectives, including HCI, interaction design, human factors, but also art and architecture. As does *Ubiquitous Computing,* this course would come as a follow-up to *Creation and Computation*, with a specific focus on interaction design and prototyping for art practices, be it physical devices or whole-body interaction systems.

Workshop on Communicating research to the Scientific Community - Writing papers is essential for the dissemination of researchers' outcomes, and for increasing of the visibility of the research lab to a broader audience. However, writing for a specific community requires adjustments in style and methodology. There is a strong demand on designers to contribute more to scientific venues, and students would highly benefit from being trained on how to communicate their research to such an audience. In this workshop, I would provide students with the specific and key points that one should focus on for the production of design and technical papers targeting the scientific public.

Digital Sketching Interfaces - This course has been held as a pilot once before. In the future we want to change it by embedding more lectures focusing on research into artistic topics (e.g. rendering into artistic styles and limitations of current digital sketch programs), as requested by the students. We also plan to extend the course by introducing studio sessions during which the students will have the opportunity to closely collaborate on their project under the supervision of the instructors, to take better advantage of the thoughts and ideas of both designers and computer scientists.

Introduction to Data Visualization and *Advanced Data Visualization* - I had the privilege to co-teach the *Data Visualization* class last fall, and we found that it is too general as is. In the future, we would like to split up the course into two. The introductory course would give a broad overview of the topic, including history, related work, techniques and methodologies. This would be coupled with studio sessions applying the concepts just learnt in class, for the students to better integrate the key points and familiarize themselves with the topic. The advanced course would target students that have already acquired all the required knowledge and experience in programming and information visualization technique, to allow them to focus on specific aspects. It would be more studio-oriented, and the students would be offered a more specialized content, focusing on a specific subset of the field that interests them (e.g. Maps, Animations, Interactive Interfaces) during which they would realize a full prototype.