

# Teaching Statement

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**Teaching Philosophy.** I am fascinated by the nature of teaching as one of the most humane activities with the largest impact on society at large and on individuals. As a complement of research, teaching improves the capability of our society to address its needs. At the level of the individual, teaching molds the characters of students and teachers. I am convinced that teachers should be facilitators for students in their active quest for learning. I got first hand experience during high school where, in contrast to many schools, the main role of the teacher was to facilitate sessions where students were expected to engage in active discussions about topics investigated outside the classroom. I find many similarities between this method of learning and research, and I have tried to encourage it in my diverse teaching experiences.

**Teaching Experience.** My first classroom teaching happened when, still being a sophomore, I volunteered as instructor of a one-week preparation Calculus workshop for new students at the School of Engineering of UNAM. I enjoyed meeting with about forty students where I found my skills challenged and a lot of satisfaction in helping them prepare for college. Here I could understand that teaching is a two-way process that requires the mastery of the subject matter and great communication skills.

At the Division of Informatics of UTFV, a junior college, I was in charge of one class of about thirty students in the Spring of 96 and from the Fall of 97 through the Fall of 98. I taught and designed the curriculum of "Programming Logic", "Advanced Programming", and "Analysis and Design of Information Systems". Here I learned that teachers are leaders and that one key for effective teaching is to inspire students. I had to find ways to instill passion in many students that, not having any other choice, pursued an associate degree without much enthusiasm. I also designed a short course on UNIX for professors from every division, the most diverse audience I have had, and the challenge was to keep all of them engaged.

At UNAM, I had the opportunity of teaching one class in each semester from the Spring of 97, when I still was a Masters student, until the Spring of 2000. I taught "Computers and Programming", required for every undergraduate in the College of Engineering, and "Expert Systems", an elective for Computer Engineering majors where I incorporated fresh research topics that I investigated while developing my Masters' thesis. Here I confirmed that it is essential to understand students' attitudes and backgrounds in order to lead them in learning not only for need but, more important, for the satisfaction of becoming an independent thinker.

**Student Research Mentoring.** I have advised and mentored students at different levels. At UTFV, I advised two students in the final project required to get the associate degree. At UNAM I advised three students during the development of their B.S. theses and I was in the committee of several others, one of my best rewards was their graduation. As a Ph.D. student I have mentored an entry-level Ph.D student in our group since the Fall of 2003 and an undergraduate student that visited our group during the Summer of 2005. Mentoring allowed me to encourage the independent and critical thinking that are essential for research.

**Teaching training and Interests.** The Graduated Teaching Academy of Texas A&M University is a program to promote better teaching through a series of seminars, workshops, and observations. I participated in the seminars, Fall 2004, conducted by professors recognised for their remarkable teaching at Texas A&M and other universities. In the Spring of 2005, I observed classes of professors in several departments and discussed their styles with my Teaching Mentor. I was awarded a certificate of completion as a GTA fellow.

I have a wide range of teaching interests. I am able to teach all undergraduate course material and all graduate core course material. I would especially enjoy teaching courses in my areas of expertise such as motion planning, robotics, computational geometry and related areas such as algorithms, machine learning, data mining, computer graphics, and physically-based modeling.