Teaching Portfolio

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1 Professional Information

1.1 Statement of teaching goals and professional reflection

As mentioned in my statement of teaching philosophy, I strive to ensure (1) access to knowledge and to students and (2) excellence in my teaching skills and students' acquired skills. Accordingly, my teaching goals are: (1) to reach out to all students under my supervision, to provide varied ways for them to access knowledge, and to give rise to students' curiosity and autonomy; and (2) to hold myself to high standards in terms of teaching, and my students to high standards in terms of academic performance.

As a result, over the last eight years, I have tried very varied ways to improve my teaching style to reach my first goal, and I have never failed to hold both students and myself to high standards to meet my second goal by never accepting lower performance and working hard on instauring a culture of excellence and more recently some idea of an etiquette in the classroom.

Not all my efforts and trials were successful. However, I show, in what follows, that I was able to learn from failed attempts, and regardless of trial and error, and that I always sought improvement.

Finally, if I had to define my style in short, I would say "student-centered".

1.2 List of courses taught, Teaching load information, including level and class size

1.2.1 Overview

Since fall 2003, I have taught:

- at the **undergraduate** level:
  - CS1401: Introduction to Computer Science (4 times)
  - CS2402: Data Structures (9 times)
- at the **graduate** level:
  - MIT 5310: Fundamentals of Computers (2 times)
  - CS5350: Advanced Algorithms (2 times)
  - CS5303: Logical Foundations of Computer Science (4 times)
- **cross-listed** courses (UG and G):
  - CS4320 / CS5314: Artificial Intelligence (4 times)

as well as special topics and topics in intelligent computing and in emerging computing paradigms focused on or related to my research, at the undergraduate and graduate levels, such as Constraints, Optimization, and Problem-Solving applied to Game Development.

Courses numbered CS1XXX, CS2XXX, CS3XXX, or CS4XXX are undergraduate-level courses, CS3XXX and CS4XXX being upper division courses. Courses numbered CS5XXX are graduate-level courses.

1.2.2 Independent studies

Since Fall 2004, I have offered independent studies almost every semester, except in Fall 2007 (first semester after my first maternity leave), Fall 2008, and Fall 2009 (first semester after my second maternity leave and a semester during which I also had to take another family-related leave). In total, I have mentored 17 students (graduate and undergraduate) in independent studies. The list of independent studies I have offered in reported in Table 1.

Term	Subject	Type	Enrollment	Topic
Fall 2004	CS 4371	Computer Science Problems	1	Constraint solving techniques
Spring 2005	CS 4371	Computer Science Problems	1	Constraint solving techniques
	CS 5391	Individual Studies	1	Global optimization
Summer 2005	CS 5391	Individual Studies	1	Constraint hierarchies
Fall 2005	CS 5399	Individual Studies	1	Constraint solving techniques
Spring 2006	CS 5391	Individual Studies	1	Constraint solving and security
	CS 4371	Computer Science Problems	1	Expert systems for constraint modeling
	CS 4371	Computer Science Problems	1	Bio-informatics: Predication of the 2ndary structure of RNA
Fall 2006	CS 4371	Computer Science Problems	2	Constraint solving techniques
Spring 2007	CS 4371	Computer Science Problems	1	Artificial intelligent for games
	CS 5391	Individual Studies	1	Constraint solving and security
Spring 2008	CS 4371	Computer Science Problems	1	Constraints and optimization For real-world applications (focus on industry)
Spring 2009	CS 4371	Computer Science Problems	1	Constraints for Data Analysis in Gait Therapy
Spring 2010	CS 5391	Individual Studies	1	Program verification
Fall 2010	CS 5391	Individual Studies	1	Constraint solvers
Spring 2011	CS 5391	Individual Studies	1	Continuous constraint solving

Table 1: List of independent studies offered from fall 2003 to spring 2011

1.2.3   Lectures

The list describing my teaching load since Fall 2003 in terms of lectures in reported in Table 2.

Term	Subject	Course Title	Enroll.
Fall 2003	CS 2402	Data Structures (co-teaching with F. Fernandez)	30
	MIT 5310	Foundations of Computers	25
Spring 2004	CS 2402	Data Structures (co-teaching with F. Fernandez)	32
	CS 2402	Data Structures (co-teaching with F. Fernandez)	15
	CS 5314	Artificial Intelligence	11
Fall 2004	MIT 5310	Fundamentals of Computers	18
Spring 2005	CS 4320	Artificial Intelligence	19
	CS 5314	Artificial Intelligence (cross listed with CS4320)	8
Fall 2005	CS 2402	Data Structures	26
	CS 5303	Logical Foundations of Computer Science	18
Spring 2006	CS 2402	Data Structures	32
	CS 4320	Artificial Intelligence	28
	CS 5314	Artificial Intelligence (cross listed with CS4320)	8
Summer 2006	CS 4390	Special Topics in Computer Science: on Constraints and Optimization	12
	CS 5354	Topics in Intelligent and Soft Computing: on Constraints and Optimization	15
Fall 2006	CS 2402	Data Structures	39
	CS 5303	Logical Foundations of Computer Science	16
Spring 2007	CS 2402	Data Structures	26
	CS 5303	Logical Foundations of Computer Science	6
Fall 2007	CS 2402	Data Structures	41
	CS 4320	Artificial Intelligence	3
	CS 5314	Artificial Intelligence (cross listed with CS4320)	7
Spring 2008	CS 2402	Data Structures	38
	CS 5303	Logical Foundations of Computer Science	19
Summer 2008	CS 4365	Topics in Soft Computing: Problem solving applied to Game Design	20
	CS 5354	Topics in Intelligent Computing: Constraints and Optimization	5
Fall 2008	CS 2402	Data Structures	36
	CS 5350	Advanced Algorithms	22
Spring 2009	CS 1401	Introduction to Computer Science	39
	CS 5303	Logical Foundations of Computer Science	15
Fall 2009	CS 1401	Introduction to Computer Science	46
	CS 1401	Introduction to Computer Science	32
	CS 1401	Introduction to Computer Science	21
Spring 2010	CS 1401	Introduction to Computer Science	38
	CS 1401	Introduction to Computer Science	11
	CS 5303	Logical Foundations of Computer Science	14
Fall 2010	CS 5350	Advanced Algorithms	25
Spring 2011	CS 5303	Logical Foundations of Computer Science	16

Table 2: List of lectures from fall 2003 to spring 2011

1.3 New courses and/or major course revisions

- **Biology-related material in CS1401:**

  In 2009, I was involved in Dr. Steven Alley's grant 1 T36 GM078000-01 from the National Institute of Health. As the instructor of CS1401 (Introduction to Computer Science), I was in charge of instilling a bio-related flavor to this class, in an effort to better appeal to non-CS-major students taking the class, and in particular, students from biology and biology-related disciplines. I made a conscious effort to specifically use more examples related to biology during lectures, and as this course usually has between 3 and 4 lab sections, I dedicated one lab section to biology-related topics. I ran, in parallel to other lab sections, a semester-long lab offering only biology-related lab topics. This opportunity of dedicating a full lab section to only biology-related topics happened only in spring 2009 as we had a teaching assistant funded by the grant fully dedicated to the "biology" lab section.

  After that (starting in Fall 2009), due to concurring factors: there was no more such teaching assistant support, the enrollment of students picked, and the number of teaching assistants for this class was reduced from 4 to 2, I could not sustain the experience. Instead I reversed to a situation in which all lab sections received the same lab topics (not to overload the TA's grading activities) and for that reason, I was not able to offer only biology-related labs (not all students were biology students and it would not have been fair to the students nor to computer science to put a unique emphasis on biology). I nevertheless continued to propose lab topics related to biology, but at a lesser rate (maybe one out of 3 or 4). I continued to do this until spring 2010, after which I have not taught CS1401 again.

  In 2011, within the scope of the same above-mentioned NIH grant, Vladik Kreinovich and I have started to brainstorm about the design of a new introductory course for non-computer-science majors. Our discussions, which have involved Thomas Boland from Biomedical Engineering at UTEP, have led us to consider ways to teach introductory programming through tools that are relevant to bio-related students (such as matlab, mobile programming). The goal is to have such a course designed and ready to be held by September 2012.

- **Summer courses:**

  Summer courses can be critical for our students to graduate (to fulfill the requirements of their degree plan). I have several times offered summer courses to add to the pool of courses that students could pick from. In particular, in summer 2008, to better serve the students' needs, I have designed a survey in concertation with Ann Gates (CS chair at that time), sent out to all of our CS students, polling them about their course preferences.
  ⋆ *The survey sent out to students in available in appendix, Section 3.*

  All the summer courses listed below were project-based courses as I believe that the understanding of many concepts requires first-hand hands-on experience, and this is the case of constraint programming.

  1. **CS4390: Special topic on Constraint Programming for Video-Games**: undergraduate level, summer 2006.

All projects were related to video-games and/or animation, therefore resulting in topics such as constraints and 3D animation, constraints for scene lighting.

2. **CS5354: Topics in Intelligent Computing: Constraint Programming**: graduate level, summer 2006.
In my graduate class, the projects were related to the students' research activities (if a connection was possible), such as constraints and security, constraints and bio-informatics; or could be very general if there was no overlap with the students' research, such as constraints for generating and solving sudoku puzzles, constraints for controlling air traffic at the airport of Chicago.

3. **CS4365: Topics in Soft Computing: Problem-Solving applied to Game Design**: undergraduate level, summer 2008.
This course was very hands-on and we dissected the game design process, always emphasizing problem-solving skills required and techniques used to reach our goals. In teams of 2 to 3 students, all students developed their own video game by the end of the 8-week-long course.

4. **CS5354: Topics in Intelligent Computing: Constraints**: graduate level, summer 2008.
This course was conducted in a way that was similar to the summer-2006 course. I only added optimization techniques as part of the covered material. Similar types of research projects were proposed (either related to the students' research topics, or more general).

Developing courses related to constraints was a way for me to integrate state-of-the-art research, including mine, in the covered material and therefore expose students to the excitement of research.

1.4 Evidence of curriculum development, including sample syllabi and course materials

1.4.1 Changes in CS1401: Introduction to Computer Science

□ **Modification of the lecture plan.** While teaching CS1401, in collaboration with Mary Kay Roy at UTEP, we regularly had discussions around the content and layout of the lecture plan, always aiming at providing a better experience to our students, enhancing their success. As part of these efforts, I volunteered to review textbooks for this course; I even had one of my classes "class-test" one of the books.

We eventually decided to defer the original lectures that covered objects and classes early in the semester towards the end of the semester. Our reason for doing this was that we wanted students to fully grasps programming concepts such as control structures, logical expressions before to be distracted by object-oriented programming considerations.

⋆ *Attached in appendix, Section 3 are copies of emails inviting me to review textbooks, as well as copies of syllabi emphasizing the change of lecture plans.*

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☐ **Changes in grading.** I also recommended to change the way final grades were computed, by mostly decreasing the lab participation grade, from 14% to 7%, redistributing the 7% onto areas that better reflected students' skills (such as exams or labs).

☐ **Course material.** Every semester, I work on improving my class notes and I work at reinventing lab topics. Therefore, over the severl times I taught CS1401, I have, in collaboration with Mary Kay Roy, our valuable TAs and peer-leaders, significantly contributed to the material that can be used for teaching this course.

1.4.2   CS2402: Data Structures – lab evolution

I taught CS2402 nine times. Originally, when I joined UTEP, I co-taught this course with Franck Fernandez, who was lecturer in computer science at that time. I followed his lecture plan and advices for content and lab level. I then taught this class alone and made it evolve to a course in which I would offer five significant labs a semester, each covering a major topic and several sub-topics of the course. I developed my own lecture notes and set of labs, which I aimed at rarely repeating. As a result, I developed a large set of labs.

I also aimed at preparing our students to mature thinking and problem solving. As a result, I would always write my labs as problems to solve, and not so much as a list of steps to implement: students had to come up with their own sequence of steps and solving techniques. In a similar aim to better prepare our students to upper-division courses, I would always require them to turn in a report along with their implemented solution of the given lab problem.

⋆ *Some labs are provided as appendix, Section 3.*

1.4.3   CS5303: Logical Foundations of Computer Science

I have taught CS5303 4 times. I have originally followed the lecture outline gotten from Francois Modave who was teaching it before me. During Spring 2007, when there were two sections of CS5303 open, Vladik Kreinovich and I (instructor for one section each) coordinated our efforts in order to make the experience of students from both sections fair and equitable. I taught this class alone the last two times (spring 2010 and spring 2011).

Since spring 2011, I have made this course evolve significantly to a team-work project-based class with a lot of references to practical use of logic. Giving weekly quizzes and homework, as well as two exams, article presentation, tutorial writing assignments, I have developed a significant body of teaching material.

⋆ *Samples of the teaching material is available in appendix, Section 3.*

1.4.4   Evidence of teaching style evolution

One of my main concerns while teaching is to engage all students. This is the reason why I like to diversify the activities in class (in group, individual) as well as the types of assignments (articles, tutorials, exercises, presentations). I have for instance gotten used to giving an individual quiz at the beginning of the class (covering material from previous lectures or reading assignments), and then giving the same quiz in groups at the end of the class (when I know I will cover the quiz' topics again in the time between the two quizzes). This allow for a very different group dynamic in which all participants have already had time to think about the topics at hand, and where there is a grade at stake. This is a way to implement the "Think Share Learn Report" technique.

⋆ *Evidence of repeated quizzes as individual and in-groups is available in appendix, Section 3.*

Another way I found of engaging students is to remind them that they are accountable for their work and performance, that they have to perform, and that so do I. Since experience showed me that hoping that such culture would be in place from showing good practice did not work, I decided to take action over it and since fall 2010, I have been doing the following:

- Asking students to sign the syllabus of their course as they would sign a contract: agreeing to behave as stated in the syllabus, and acknowledging that they know what is in for them in this course: material, grading, etc.;

- Making some room in the final semester grade for participation: this shows students that their participation is valued, required, and rewarding (5%); and

- Having all students fill out a daily form: at the end of each class session, students have to turn in a daily form in which they have the opportunity to reflect on their own attitude by grading themselves about their attendance (on time or not), their participation (passive, active), their preparedness (prepared or not). I find it a subtle way to daily remind students about their duties as students.

As a result, I observed, over the two semesters during which I conducted this experience, that only one student did not completely adhere to the culture by still missing class and arriving late. Besides, all others were always on time, would always let me know in advance if they were going to miss class, never used their cell phones in class, and most importantly showed great dedication to the class.

⋆ *A syllabus "as a contract" is available in appendix, Section 3. To be noted is also the level of detail regarding students' expected behavior as opposed to previous syllabi (also available in appendix for comparison).*
The daily form is also available.

1.4.5 Integration of research and teaching

Finally, as I am passionate about my research and I believe that showing such passion to students can only have a positive impact, I strive to including topics related to my research as often as relevant.

As trivial examples, each time I taught a course either focused or related to constraints in summer (2006 and 2008), I have add a perfect opportunity to expose my students to my research. I would then let them know about state-of-the-art tools and current research in the covered areas. Also, teaching CS5303 on Logical Foundations of Computer Science is an ideal context for me to introduce constraints. Since I give projects for students to work on during the semester, there is always at least one project that is related to constraints.

At the other end of the spectrum, I also managed to integrate my research into introductory courses in computer science:

- In CS2402, I would start each semester with a lab topic related to the use of stacks and queues. I would never use exactly the same topic, but I would pick a topic that can be viewed as a constraint problem. Therefore, when going through the solution with my students, I would expose them to the similarity of their solving approach to the constraint programming approach.

- In CS1401, thanks to the requirement that students should attend seminars, in 2009, I opened the research workshop,CoProD, I annually organize to my CS1401 students. As a result, about 10 students attended my workshop and benefitted from the opportunity to attend talks given by leaders in constraint programming (such as Bart Selman or Rina Dechter).

1.5 Evidence of use of technology to complement instruction

I always look for ways to improve our students' experience. Over the years, I have polished my style as an instructor, I have also tried technology tools with varied success rates. In what follows, I describe what were my main attempts at using technology.

1.5.1 CourseMine

I used UTEP's "coursemine" in summer 2008 for both classes I was teaching at that time (CS4365: Problem-Solving for Game Design, and CS5354: Constraints). It was merely a simple trial of technology in a constant attempt to provide our students with a better experience.

It was convenient by some respect. However, overall, I did not find it as convenient as maintaining my own website for teaching. Also, I like the openness of my website: anyone can access it and

use any of my teaching material. This was not the case of coursemine in which everything was login-and-password-protected. Moreover, my own TA was not allowed to access and edit my course content, so I decided not to pursue the experience any further than summer 2008.

1.5.2 A documented and interactive website

I use my website as a way to enhance my research and UTEP's visibility, but also as an access tool: access to resources and information for my students. In an effort to improve the access, I transformed my website several times. The two last versions are still reachable: (former) http://www.cs.utep.edu/mceberio/research; (last) http://www.martineceberio.fr.

I make efforts to update as much information as possible for my students on my course pages. Also, as vailable on my latest website, I make possible and engage students in contributing to their course website as visible on, for instance, http://www.martineceberio.fr/teaching/CS5350 at the bottom. I alway seek ways to engage them more, to make them own their own courses.

To spark off their participation, I counted their online participation in the participation grade counting towards their final grade.

1.5.3 Instant messenging

In an effort to better engage conversation with my students as well as to provide help virtually "round the clock", I started to use instant messenging with my students. It was successful in the sense that students who would otherwise not dare to seek help used it, some who could not commute everyday to UTEP used it, some who had a schedule conflicting with mine used it.

However, the success of it was in large part due to the fact that most people used some kind of messenging tool at that time. Therefore, using it was not seen a task to keep in mind, since instant messenging tools were always on on pretty much anybody's computer[1].

The down side of it is that when people, including me, gradually stopped using it, its purpose was easily defeated. I do not use instant messenging with my students anymore. I make a point in replying emails very timely though.

1.5.4 Up-to-date "'trendy" material

I recently introduced mobile app development in the material I teach. As part of the discussions related to the design of a new computer science course for non-major graduate students, as described

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[1]In that respect, I point out that the chat room of blackboard for instance never worked for me as it required me to log in and have it open specifically, and that ended up being just yet another constraint.

in Subsection 1.3, the need to mobile app development was brought up. I decided to pilot an introduction to computer science through mobile app programming this summer 2011 both for the summer research project that I supervise at EPCC and for the Nexus student interns in my research lab. All high-school students have been working and successfully progressing on the basics of computer science through Android programming over the past 3 weeks. I plan to survey them at the end of summer to better understand the use of this "trendy" mean in getting high-school students involved in and excited about computer science.

The students currently develop an app for genetic sequence comparison as well as an app for my research group CR2G.

1.5.5   Online surveys

Without additional surveys, the only formal feedback we receive from students is the one they provide during end-of-semester evaluations. I find that by the time we actually receive this feedback (sometimes at half of the subsequent semester), it is too late to make any adjustment to the course that was evaluated. Therefore, in an effort to always better serve my students, I like to survey my students at mid-term so that the feedback I receive is timely and allows me to make adjustment to the class as needed. Besides, it also lets students know that their opinion is valued and will be taken into account.

I started requesting mid-term surveys from CeTAL and used this mean to receive earlier feedback during a few semesters, including summer to make up for the lack of evaluations at all. I then decided to organize my own through anonymous surveys on surveymonkey.com. During 2009 and 2010, due to my leaves, I was not able to set up such surveys, but I resumed them in spring 2011.

⋆ *I am attaching examples of surveys and results of the provided surveys in appendix, Section 3.*

1.6   Professional development in teaching, including workshops and seminars presented and attended

- I attend **CETaL**[2] and other workshops on campus as my schedule allows. However, I have mostly attended such workshops until a few years back, and over recent times, I have not been able to attend many of them, if any. To compensate, I have documented myself to improve my teaching and mentoring skills, through books such as "Taking Back the Classroom" written by Kirk, or "The Elements of Mentoring" by Johnson and Ridley.

- I was also an **NSF ADVANCE IMPACT fellow** from May 2006 to May 2007. Being an IMPACT fellow provides with the opportunity, during a complete year, to be part of a diverse group of faculty (from accross UTEP: several departments, colleges, tenured and un-tenured faculty). This group is given a one-week workshop about integrating Research, Teaching and Service (and the fourth one that is emphasized: Life) and the associated challenges. At the

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[2]CETaL: Center for Effective Teaching and Learning, at UTEP.

end of the May (2006) week-long workshop, all fellows have to turn in a project for integrating R/T/S during the year of the fellowship. During the year, the group meets once a month to discuss their progress, with respect to their individual project. At the end of the following May (2007) week-long workshop for the new IMPACT fellows, all fellows have to make a presentation about the benefits of the program over the year, and turn in a report assessing their work in integrating R/T/S with respect to the original project. This experience taught me a lot about the three components: Research / Teaching / Service – R/T/S, and how to integrate them. From this experience, I learned very interesting ideas, such as the "Just In Time Teaching" concept that I integrated to my teaching. I also recently came accross the "Think Share Learn Report" concept and I immediately integrated it successfully in my teaching.

- I have attended **NSF workshops associated with specific programs**: BPC community meeting, in Los Angeles, CA, in 2010 and CE21 community meeting in New Orleans, LA, in 2011. Although these meetings have some focus on the preparation of a proposal writing, they also offer a lot of brainstorming as well as informational sessions that helped me enrich my views about teaching, mentoring, as well as reaching out to minorities. In particular, I have attended sessions on gender balance and these have provided me insight on way to handle gender differences and unbalance in my classes. For instance, it has made me realize even more clearly the need to make sure that all groups are engaged and that different groups react to different triggers.

- I sought improvement in my teaching by volunteering to be a **reviewer for textbooks**. I found the experience very rewarding as a teacher as it gave me the opportunity to critically assess the way another teacher was presenting his ideas about data structures. It helped me a lot in my teaching by reinforcing some of my ideas about teaching, but also by providing me with new angles and examples for presenting part of the material I usually teach. In particular, I have reviewed two textbooks for publisher Scott and Jones, one for Elsevier, as well as *Java for Everyone* (class test) by Horstmann at Wiley, 2009, and *Data Structures: Abstraction and Design Using Java*, by Koffman and Wolfgang at Wiley, 2009.

- In a constant effort for improving my teaching, I also regularly conduct **additional students' evaluations** of my courses, usually at mid-term. I first did it through CeTAL and later on using surveymonkey.com. Such evaluations provide me with valuable information about how the course is going, and the timeline of these evaluations allows me to adjust my teaching style to the needs of my students over the course of the semester. I also believe that conducting these evaluations is another way to show our students that their input is respected and valued: indeed, after each midterm evaluations, I take the time to discuss the outcome of the evaluations with my students, and I tell them how their opinions are going to impact the course. This is one of the ways I implement both my values of respect and communication.
  ⋆ *See CeTAL evaluations' criteria and scores in appendix, Section 3.*

- I was part of the **UTEP AWARE program** during the academic year 2004-2005. I believe that the more I know about the university, the better I can help my students and project an image that is professional.

- I recently came across information about **QPR (Question, Persuade, & Refer) training** on campus offered by the University Counseling Center. Such a training seems essential as we daily interact with students and the better prepared we are to face emergency situations, the better for our students' sake. This is even more so these days as we have a significant number

of students living across the border, who are in distress due to the situation in Cd Juarez. I am currently taking actions to organize such a training for the members of the Women's Advisory Council. The reason for picking this council is that response to students' distress has been part of our council's conversation but also because the variety of participants of this council makes the impact of such training broader: hopefully members taking the training will organize such training in their own area of UTEP later on. I personally plan to organize students' training in fall 2011.

2   Evidence of Teaching Quality

2.1   Student evaluations and comments, tabulated and summarized

2.1.1   Students' evaluations

In what follows, I report the students' evaluations of my courses (when available).

Spring 2009 and Fall 2009's evaluations are omitted because in spring 2009, I taught only 5 weeks (the rest of the semester being taken as maternity leave) and about the same in fall 2009 (the rest of the semester being taken as a leave for family and health reasons), and it is not clear whose teaching the evaluations actually reflect (mine or my adjunct).

Also, the numbers of students do not match the ones listed before as enrollment: the numbers listed hereafter reflect the number of students who actually filled out evaluations for the given courses.

Summer classes were at first not evaluated: this explains why my summer-2006 courses do not appear in the list of evaluations.

Term	Subject	Course Title	Enroll.	Instructor	Course
Spring 2004	CS 2402	Data Structures	31	4.6	4.45
	CS 5314	Artificial Intelligence	11	4.6	4.0
Fall 2004	MIT 5310	Fundamentals of Computers	18	4.4	4.1
Spring 2005	CS 4320	Artificial Intelligence	13	4.6	4.2
	CS 5314	Artificial Intelligence	5	4.6	4.4
Fall 2005	CS 2402	Data Structures	20	4.6	4.4
	CS 5303	Logical Foundations of Computer Science	15	4.9	4.7
Spring 2006	CS 2402	Data Structures	22	4.6	4.3
	CS 4320	Artificial Intelligence	26	4.8	4.2
	CS 5314	Artificial Intelligence	6	4.2	4.2
Fall 2006	CS 2402	Data Structures	28	4.0	4.1
	CS 5303	Logical Foundations of Computer Science	14	4.4	4.4
Spring 2007	CS 2402	Data Structures	14	4.3	4.3
	CS 5303	Logical Foundations of Computer Science	6	4.3	4.2
Fall 2007	CS 2402	Data Structures	27	4.5	4.4
	CS 4320 / 5314	Artificial Intelligence	8	4.6	4.0
Spring 2008	CS 2402	Data Structures	29	4.6	4.4
	CS 5303	Logical Foundations of Computer Science	16	4.5	4.1
Summer 2008	CS 4365	Topics in Soft Computing	5	4.6	4.4
Fall 2008	CS 2402	Data Structures	39	4.1	4.1
	CS 5350	Advanced Algorithms	22	4.25	4.0
Spring 2010	CS 1401	Introduction to Computer Science	38	4.15	4.1
	CS 5303	Logical Foundations of Computer Science	14	3.7	3.4
Fall 2010	CS 5350	Advanced Algorithms	25	4.5	4.3

Although my evaluations' scores fluctuated, the semesters of lower scores match times of hardness in my personal life (e.g., Fall 2006, Spring 2010) that in particular required me to be away from the classroom more than usual, and I showed I was always able to rebounce and get back to better performance.

⋆ *Actual student evaluations are available in appendix, Section 3.*

2.1.2 Grade distribution

I report below the average grade distribution (in percentage of each letter assigned) over all the graduate courses and undergraduate courses I have taught:

Level	A	B	C	D	F
Graduate	53.2	30	9.6	4.9	2.2
Undergraduate	27.9	31.8	19.8	10.4	10.2

⋆ *The detailed grade distribution table is available in appendix, Section 3.*

2.1.3   Students comments and adjustment of my teaching

In what follows, I review topics that were mentioned regularly in my evaluations (positively, negatively, or both) and I describe how I addressed the comments by for instance adjusting my teaching style.

- **Textbooks.** Over the semesters I have taught at UTEP, I have sometimes received comments about the textbook I had chosen. And I could honestly not argue much about the comments since I was not either convinced myself: it is sometimes not trivial to find a good textbook. This is even more true since a good textbook for me as an instructor is a textbook that covers all the important material in a relevant manner. On the contrary, a useful textbook for students tends to have appeal as one of its most important criteria, of course, content ranking shortly after.

  I have therefore, over the years and for all the courses I have taught, always sought a good solution to the textbook problem: either finding a good textbook, good set of textbooks, or no textbook with a list of recommended readings.

  This is what I have done for CS5303, course for which I have sucessively:

  - adopted a textbook that was not particularly liked,
  - decided not to have a textbook but instead a list of recommended readings: this idea was received with very nuanced success. I hence decided to reverse my decision for the subsequent semesters;
  - adopted 2 textbooks and added a list of recommended readings: first I made sure the requirement of two textbooks would not be a financial burden to our students but picking reasonably-priced books, then I made efforts to indeed make use of both books. Since this last change, I have not received any comment about the textbook in students' evaluations.

  In the case of CS2402, I have in 2006 decided to part away from the usual Java-language-based textbook in an effort to force the students to focus on concepts / pseudocodes of algorithms, as opposed to intricate syntactic details of Java. To this end, I decided to adopt "Data Structures and Algorithms", by Aho, Ullman and Hopcroft (Eds. Addison-Wesley), an older, less visually appealing book with however all the content presented the "right" way. Students appeared to be quite puzzled by the book at first, even though some told me, after the end of the semester, that they had realized, eventually, that this book was very good. I tried the experiment twice (spring and fall terms of 2006) and surveyed my students about their needs in terms of a textbook. There was no clear conclusion to be drawn. As a results, I decided

in spring 2007 to, instead, propose a pool of suggested books, enforcing that every student in my class should own one textbook among the given list, and I surveyed again the students before spring break to better understand their needs, and propose a fully adapted textbook. The result convinced me to fully reverse back to a more traditional textbook requirement after that.

⋆ *See: http://www.cs.utep.edu/mceberio/teaching/, follow Archives and CS2402, spring 2007.*

- **Projects.** I like to make most of the courses I teach semester-long project-based courses. Exceptions to this are for instance the CS2402 and CS1401 course because they are introductory and students need shorter-term milestones to be kept on track.

  Although the feedback about semester-long projects has always been overally positive, some students had more nuanced comments pointing out that they needed more safe-guards and milestones for the project during the semester as well as more time in class to work on the project. Some have also expressed that they would prefer shorter-term assignments.

  I did not give up on the semester-long projects. However, I established a sequence of progressing deliverables for the students to turn in over the course of the semester, as a way for them to see their grade gradually build up and avoid the surprise of the end-of-semester assessment. I also proposed, in parallel to the semester-long projects, shorter-term assignments to address the comment requesting more and smaller-scale activities. Moreover, I made sure to regularly announce the current status of the course through a "to date / to go" kind of report so that students know what to expect for the rest of the semester and can plan their time accordingly. This required me to post future assignments very much ahead of time.

  These changes are visible, for instance, on the website of the last two courses I taught (CS5350 in fall 2010, and CS5303 in spring 2011) where the complete list of assignments is available.

  ⋆ *See: http://www.martineceberio.fr/teaching/CS5350 or http://www.martineceberio.fr/teaching/CS5303. See also in appendix, Section 3, emails sent to students about the progress of the class.*

- **Teaching style: board vs. slides.** I teach for the most part writing notes on the board: I rarely use slide presentations. I received some comments about it, mostly expressing that students would like to be able to have the class notes.

  Still I continue to use the board only as I like to make my lectures interactive and slides just do not work well for me. However, I worked on meeting students' needs by posting notes or resources for the class on the website of my courses.

  ⋆ *See any of my course websites available from http://www.cs.utep.edu/mceberio/teaching or http://www.martineceberio.fr/teaching.*

- **Use of instant messenging:** I started to use instant messenging with my students in fall 2005. I received very positive feedback in the students' evaluations about this way of interaction. I continued to use it until around 2010, using it gradually less and less. I finally stopped using it as I do not use this kind of messenger any more. I have not received any comment

about students' needing more interaction: as a very student-centered instructor, I dedicate a lot of my time to my students, reply to their emails very fast, and make a lot of time for them as needed; hence I think that instant messenging was not essential.

- **Homework vs Quizzes:** I have received conflicting comments about my balance of home-work assignment and quizzes over the semesters. In particular, on the one hand, some students commented on the fact that I give too many quizzes in comparison to the few homework assignments to turn in; on the other hand, some other students have expressed that they like very much the many quizzes as it keeps them under pressure to work regularly.

  Here is what I used to do: I value quizzes as a way to remind students that they have to work consistently over the semester, to inform them about what topics matters and about my examination style, as well as to reward the students who consistently work. So my style is to give quizzes every week, except on exam's weeks. Concerning homework, I value it too, but find it hard to grade homework for all students every week. As a result, I used to give hand-outs for students to work on but would only seldomly pick them up for grading.

  Here is how I changed the homework-quizzes balance since fall 2010: I did not give up on quiz frequency and I still make a point in turning the grades back during the next lecture session. However, I have solved the homework problem by assigning weekly homework that is "to be turned in" but will only picked up randomly. Students who want feedback but were not randomly picked can turn their homework in anyway and they will receive feedback as well. In practice, it means that every week, I have about 5 to 7 homework assignments to grade: it is much more reasonable than grading the whole class, and it still keeps students under some kind of pressure.

  ⋆ *See on the website of my two previous courses (http://www.martineceberio.fr/teaching/) for the list of assignments.*

- **Projects / Labs:** In projects as well as in labs, I like to have students work in group: for labs, in pairs; for projects in groups of 3 or 4 students. I conducted pair work in labs for CS2402 during two semesters and then, due to difficulty to resolve conflicts (students dropping the course and their team mate being left alone; students not participating at all and leaving the other working alone; etc.), I decided to go back in spring 2008 to individual lab assignments, at least for introductory computer science courses, as conflicts were too much of a distraction for students who should have otherwise focused on their actual work. For projects in upper-division computer science courses and graduate courses, on the other hand, I stuck to group work as I believe that team-work is an essential skill that I aim to teach as well as the course material, and also because group work allows to tackle more complex and interesting projects.

  However, in an aim to satisfy more students, and to get the best of both worlds, I have tried several other configurations, including:

  - (1) individual projects: but several students working on the same project topic had to work together to share their experiences. At the end, the work had to be the one of each individual student.
    ⋆ *See CS5350 fall 2010: http://www/martineceberio.fr/teaching/.*

- (2) similar to the first configuration, but this time the group work is also rewarded through group assignments. Individual assignments and deliverables are also given. That was my last experiment and it seemed to work fine. Depending on students' feedback (not yet received at the time I am writing this document), I will repeat the experience in CS5350 in fall 2011 and conduct a specific students' survey about this type of configuration.

  ⋆ *See CS5303 spring 2011: http://www/martineceberio.fr/teaching/.*

2.2 Theses and dissertations supervised

2.2.1 Supervision of PhD students

1. **Luis David Lopez Gutierrez**: joined UTEP in May 2006 (after we had been in contact and had begun to work remotely together since January 2006). He was funded by the NSF DAPLDS project (see Research and Scholarship) during Summer 2006. He also received a CONACYT scholarship in Fall 2006. We worked together until Spring 2007. He left UTEP while under my supervision, during Summer 2007 due to family reasons.

2. **Mai Ahn Nguyen**: joined UTEP in January 2009 and left UTEP while under my supervision in summer 2009 to go back to his country (Vietnam) for family reasons. He barely started working on constraints with me during that time.

3. **Xiaojing Wang**: was originally Francois Modave's student and she joined my research group when he left in fall 2009. Except during her maternity leave in Spring 2011, she has since then been working on optimization algorithms for fuzzy measures extraction. We have considered varied topics such as hybrid solvers, interval representation of decisions, and applications to software quality assessment. We published one joint article (at NAFIPS'11, which won the best student paper award), and are finalizing both a journal article and another conference article. She is expected to take her comprehensive exam during summer 2011 and defend in summer 2012.

4. **Aziza Aouhassi**: joined UTEP in January 2011 (after I had been in contact with her since fall 2009). She worked in CR2G, my research group, on optimization algorithms as well as on the solver my Master's student currently develops. She left UTEP while under my supervision in May 2011 to go back to her country for family reasons.

2.2.2 Supervision of Master's students

1. **Richard Coy**, worked on his Master's thesis from Summer 2004 to November 2005. The subject of his thesis was: Making Constraints Flexible: a Concrete and User-oriented Approach. In particular, he worked on defining and implementing a general framework for flexible constraints, and on specifying a graphical interface for this purpose. The title of his thesis was: *Solving Inconsistent Continuous Constraint Satisfaction Problems: an Application to Shock-Absorbers Quality Testing.* We published a joint work on this topic at the International

Conference on Algorithmic Mathematics and Computer Science (AMCS'05), where Richard presented his work.

2. **Carlos Acosta**, worked with me from September 2005 until December 2007, on Constraint Programming for Software Verification. The title of his thesis was: *A Constraint-Based Approach to Verification of Programs with Floating-Point Numbers.* Verification is a very crucial, ex- pensive and difficult part of software development. Carlos showed that the use of constraints makes this stage of development easier, as well as more reliable.
   Evidence of success: After his defense, based on his work, he was offered a full-time research assistant position for a period of 3 years, allowing him to get his PhD, in the CNRS[3] team, at the University of Nice Sophia-Antipolis (France), led by Professor Michel Rueher.
   Current position: For personal reasons, Carlos decided not to accept the position in France. He currently works at in El Paso.

3. **Geetanjali Mesineni**, worked with me from Summer 2006 to July 2007, on a Master's project. She built a low-maintenance, high-content website for constraint solving. This was a necessary resource for the constraint community.
   Evidence of success: http://www.constraintsolving.com, the website she built and that is now (under its new design) maintained by my research team CR2G, has an average of over 1,000 unique visitors a month.
   Current position: Geetanjali currently works as a software engineer in Boston.

4. **Naga Suman Kanagala** joined my research group at the end of 2007 and graduated in Summer 2009. He worked on a Master's project on the topic of Intelligent Systems for Gait Therapy. He developed a tool to help clinicians make a reliable diagnosis of gait pathologies, and guide them through the therapy stage. Evidence of success: We were able to publish his work at a biomedical conference.
   Current position: He currently works in Ohio at Rockwell Collins as a Software Engineer.

5. **Christian Servin** worked on Constraint Programming and Security from 2006 to May 2009. His specific area of research was the Cascade Vulnerability Problems, in networks, that he chose to address using soft constraint programming techniques. In this work, we have collaborated with Dr. Eric Freudenthal (UTEP) and Dr. Stefano Bistarelli (University of Perugia, Italy).
   Evidence of success: Based on his current work on constraints and security, Christian was proposed a fully sponsored internship in the lab of Stefano Bistarelli, in Italy. He decided not to go, however, we were able to write several articles in collaboration with Dr. Bistarelli.

   Current position: Christian is now a PhD student in the Computational Sciences program at UTEP, under the supervision of Dr. Kreinovich.

6. **Antonio Cortes** worked on soft constraints for graphical interfaces. He worked with me during 2006 and decided to move on to another topic at the time of my first maternity leave. He joined Dr. Cheon's research group in Fall 2007. While working with Dr. Cheon, Antonio pursued research related to constraints and I continued to provide advise on this topic. We had a joint paper published in the proceedings of SEKE. I was a member of his thesis committee.

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[3]CNRS: Centre National de Recherche Scientifique.

7. **Paden Portillo** worked with me from summer 2009 to spring 2011. He first worked with me as an undergraduate student (year 2010) and then as a master's student (fall 2010 and spring 2011, in the Master's in Software Engineering).
Evidence of success: During his work with me, he focused on circular interval arithmetic and its potential use to solve constraints, as well as on optimization algorithms, drafting the design of a speculative algorithm. Along with Vladik Kreinovich and myself, he wrote an article on an efficient bissection of ellipsoids that was accepted at the ITEA Live-Virtual-Constructive Conference "Test and Evaluation", El Paso, Texas, January 24-27, 2011.
Current position: Paden decided to suspend his research activities at CR2G in summer 2011 due to family circumstances.

8. **Mario Bencomo** worked with me from spring 2010 to summer 2011. He first worked with me as an undergraduate student (year 2010) and then as a master's student (spring 2011).
Evidence of success: During his work with me, he focused on global constraints and rectangular systems of linear inequalities. Along with one of my other undergraduate students, Luis Gutierrez, he wrote an article on reducing systems of linear inequalities: this article is in the proceedings of the ITEA Live-Virtual-Constructive Conference "Test and Evaluation", El Paso, Texas, January 24-27, 2011.
Current position: Mario left UTEP in summer 2011 while under my supervision to join Rice University in Houston, TX, where he received a full scholarship for the PhD program in Computational Sciences and Applied Maths.

9. **Christian Del Hoyo** joined my research group in Fall 2009 while he was taking an independent study with me on constraint solvers. He is now working on a symbolic-numeric constraint solving flexible platform. He is expected to graduate in summer 2012.

10. **Shubhra Datta** joined my research group in spring 2010. Her work is about program verification using constraints. Her approach consists in combining symbolic techniques (close to formal methods) with interval constraint solvers. She is expected to graduate in early fall 2011.

2.3 Thesis committees

Below are listed the students for which I was in the Master's thesis or project committee. My involvement in the work of these students varied vastly, but in general, I also advised them: meeting with them to review their work, propose changes and research directions.

1. **Courtney Barnes (April 2010)**
Title of the Master's thesis: Bayesian Non-Parametric Regression with a Flexible Error Term Distribution
Thesis advisor: Ori Rosen (Math Department)

2. **Delia Villanueva (November 2009)**
Title of the Master's thesis: New Genetic Algorithms
Thesis advisor: Heidi Taboada (Industrial Engineering Department)

3. **Paul Rolon (December 2008)**
   MIT presentation

4. **Tsheten Wangchuk (December 2008)**
   MIT presentation

5. **Antonio Cortes (May 2008)**
   Title of the Master's thesis: Enhancing Test Data Generation using Constraint Programming
   Thesis advisor: Yoonsik Cheon (CS Department)

6. **Benjamin Betancourt (December 2007)**
   Title of the Master's thesis: Recognition of Objects Using Fuzzy Logic
   Thesis advisor: Thompson Sarkodie-Gyan (ECE Department)

7. **Sandhya Gorripati (December 2007)**
   Title of the Master's project: Investigations into Instrumented Gait Analysis.
   Advisor: Thompson Sarkodie-Gyan (ECE Department)

8. **Gang Xiang (July 2007)**
   Title of the PhD manuscript: Fast Algorithms to Compute Statistics under Interval Uncertainty, with Applications to Computer Science and to Electrical and Computer Engineering.
   PhD advisor: Vladik Kreinovich (CS Department)

9. **David Sevilla (April 2007)**
   Title of the Master's thesis: Computerized Method for Finding the Ideal Patient-Specific Location to Place an Equivalent Electric Dipole to Derive an Estimation of the Electrical Activity of the Heart
   Thesis advisor: Joseph Pierluissi (ECE Department)

10. **David Kadjo (April 2007)**
    Title of the Master's thesis: Recognition of Partially Occluded Objects Using Fuzzy Logic
    Thesis advisor: Thompson Sarkodie-Gyan (ECE Department)

11. **Kristian Dillon (July 2006)**
    Title of the Master's thesis: Optimal Position of the Electric Dipole Model for the Simulation of the Standard Twelve Lead Electrocardiogram and Easilead System.
    Thesis advisor: Joseph Pierluisi (ECE Department)
    Other committee members: Gregory Lush, Zainul Abedin.

12. **Annette Arrigucci (December 2005)**
    Title of the thesis: Testing the Effect of Training with Synthetic Speech on Task Performance with a Mixed Human and Synthetic Speech Interface.
    Thesis advisor: David Novick (CS Department)

13. **Sanjeev Chopra (August 2005)**
    Title of the thesis: Affine Arithmetic-Type Techniques for Handling Uncertainty in Expert Systems.
    Thesis advisor: Vladik Kreinovich (CS Department)

14. **Linda Susan Draper (July 2005)**
    Title of the thesis: Free Space Optical Bus Architecture
    Thesis advisor: Brian D'Auriol (CS Department)

15. **Neelabh Baijal (April 2005)**
    Title of the thesis: Privacy in Statistical Databases: an Approach using Cell Suppression.
    Thesis advisor: Luc Longpré (CS Department)

16. **Juan Rene Roldan (May 2004)**
    Title of the thesis: Feasibility Study of the LARPBS Optical Bus Parallel Model.
    Thesis advisor: Brian D'Auriol (CS Department)
    Other committee member: David Zubia
    Note: The defense (held in May 2004) was not successful. We, the committee, decided to ask for additional work, and request that Juan defend again at a later date. The same committee evaluated the work of Juan and gathered again for his final defense in 2005.

2.4   Supervision of undergraduate students

I have coordinated CR^{2}G, Constraint Research and Reading Group, since 2004. Students at all levels, from high-school to PhD students are involved in this group. In my research group, I value and encourage peer mentoring and follow the Affinity Research Group model[4].

The undergraduate students in CR2G are generally introduced to research through easy research-oriented projects. The objective is to offer them an opportunity to experience research without drowning them and compromising their success in class. I have then had several undergraduate students grow into mature researchers (such as Luis Gutierrez, Jerald Brady).

Among the former students of CR2G, the one listed hereafter were the most active ones.

1. **Jerald Brady** (funded by David Novick's NSF MII grant from Summer 2006 to Spring 2007) worked on interval computations: he extended existing libraries to make it easier for the group to test our algorithms.
   Current position: PhD student in the Environmental PhD program at UTEP.

2. **Antonio Bologna** was the webmaster of the website of our research group: at that time, it was http://www.cr2g.org (now http://cr2g.constraintsolving.com). He was in charge on listing applications of constraint programming to real-world applications.
   Current position: Master's student in computer science at UTEP.

3. **Brandon Marin** worked on using constraints for light effects, and scene lighting. His background in physics made him a very good candidate for this kind of applications. He graduated in Spring 2008. He originally planned to continue his education with a Master's degree in Europe.
   Current position: Being a member of CR2G was very instrumental in his being accepted for a Master's degree at the Imperial College Parc (London, UK) where leading research teams in constraint satisfaction are located. Due to personal reasons, he decided to accept a job offer in the US instead.

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[4]The Affinity Research Group is a "cooperative learning approach to involving students with diverse backgrounds", see https://www.createspace.com/3374426 for more details.

4. **Carlos Silva** (also took an independent study with me in the Fall 2006) worked with Christian Servin in the area of constraints and security (in particular, soft constraints).

5. **Tonatiuh Mendoza** was part of the group during 2007, and worked with Naga Suman Kanagala in the early design of a graphical tool for gait therapy.

6. **Carlos Azcarate** (Fall 2006 - Fall 2007, funded by MII during the Fall 2007) first worked on distributed constraints and later on, developed an add-on to an interval library for optimization.

7. **Essau Ramirez** (Spring 2007 - Fall 2008) worked on constraint programming techniques for gait pathology diagnosis and therapy. The objective of their project was to build a graphic tool that uses interval constraints and optimization solving techniques to determine patterns in the gait.

8. **George Moreno** (Spring 2010) worked in my research group on developing a flexible constraint solver. Due to many commitments outside the university (George also worked full time at HP), George had to suspend his research activities in summer 2010.

9. **Luis Martinez** (Spring 2010 - Fall 2010) worked on designing educational modules related to constraints and optimization, stimulating problem-solving skills for high-school students. Due to many commitments outside the university (Luis also worked full time at UTEP's police), Luis had to suspend his research activities in Spring 2011.

10. **Luis Carlos Gutierrez** (since Spring 2010) has worked with me in the area of global constraints and rectangular systems of inequalities related to tensor decomposition. He has also been very active in mentoring high-school students hosted in my lab or trained at EPCC during summer (2010, 2011).

Other students who were part of the group include: Paden Portillo, Antonio Cortes, Antonio Bologna, Carlos Acosta, Christian Servin (before they graduated and worked on his master's thesis with me), Edgar Padilla, Angel Silva, Cesar Valenzuela, Bryant Fuentes, Marisol Chacon.

2.4.1 REU students supervised

Thanks to UTEP's REU Summer Site in Intelligent Computing directed by Olac Fuentes at UTEP, I was able in summer 2010 and summer 2011 to supervise and mentor a total of 3 undergraduate students.

- **Summer 2010.**

  1. **Jeremy Cummins** from Youngstown State University, Ohio, worked on an optimization algorithm for fuzzy measure extraction under my supervision as well as my PhD student's, Xiaojing Wang. It is important to note that our joint work resulted in one article published in the proceedings of NAFIPS'11 that won the best student paper award (as detailed in Subsection 2.5.

- **Summer 2011.**

    1. **Michael Watke** from Presbyterian College, in Clinton, South Carolina, a senior computer science (and math minor) student, currently works on improving a genetic algorithm's approach to generating optimal pair-wise test suites.

    2. **Robert Bixler** from Alma College, Michigan, a senior computer science (and math minor) student, currently works on two different algorithms for fuzzy measure extraction: a hybrid algorithm and a speculative algorithm, both involving one interval component. He works under my supervision as well as my PhD student's, Xiaojing Wang.

2.4.2 Other groups supervised

During the Spring 2006, I also coordinated, with François Modave, another research group, on Computational Biology, called ISaCoBi, for Intelligent Systems and Computational Biology. The undergraduate students of ISaCoBi took independent studies with François Modave and myself on a Computational Biology-related topic. Two PhD students were also part of the group: David Herrera and Xiaojing Wang. We would meet once a week for presentations of students or faculty on topics of interest to the group.

2.5 Honors and awards to supervised students

1. Best student paper award for the following article: Xiaojing Wang, Jeremy Cummins, and Martine Ceberio, "The Bees Algorithm to Extract Fuzzy Measures from Sample Data", *best student paper award*, Proceedings of **NAFIPS 2011, the North American Fuzzy Information Processing Society**, 2011.

2. Two of my undergraduate students, Luis Gutierrez and Luis Martinez, supervised one summer research project for early-college high-school students in summer 2010, at El Paso Community College within the MSEIP project directed by Dr. Alvarez: their project won second place at the end-of-summer project competition (based on project achievement, poster, and presentation).
   ⋆ *A letter of Dr. Alvarez, commenting on this achievement as well as on my teaching skills, is available in appendix, Section 3.*

2.6 Career achievements of mentored students

The students listed below are those with most notable achievement records so far.

1. **Christian Servin (grad. 2009)** is now a student in the Computational Sciences PhD program at UTEP.

2. **Naga Suman Kanagala (grad. 2009)** is now a Software Engineer at Rockwell Collins in Ohio. He is also half-way done with his MBA from the university of Iowa.

3. **Mario Bencomo (UG grad. 2010)** recently left my research group in which he was a graduate research assistant, to join (summer 2011) Rice University's PhD program in Computational Sciences and Applied Maths, with full scholarship.

Among other students who have been under my supervision, it is to be noted that several undergraduate students decided to continue with a Master's or PhD degree.

2.7 Community and/or school-based projects guided and produced in connection with courses

EPCC summer research projects Nexus mentoring

2.8 Letters peers who have observed classes or reviewed course materials

Supplemented as appendix to this teaching portfolio are letters from peers with whom I have taught or who have been able to observe me while teaching. Supplemented letters are from:

1. Dr Francois Modave (associate professor at Texas Tech University Health Center; at UTEP at the time of our co-teaching experience), with whom I co-taught Artificial Intelligence in Spring 2004;

2. Mary Kay Roy (lecturer at UTEP in computer science), who was teaching CS1401 at the same time as I was: we had weekly meetings with our teaching assistants and lengthy discussions about the curriculum of this course. She was able to review extensively material that I prepared for this course.

3. Dr Maria Alvarez (professor at El Paso Community College) is in charge of the summer research projects program in which I am involved as faculty advisor and in which I have held seminars.

3 Appendix: List of Supporting Documents

3.1 Course information and evaluations

- Students evaluations of my teaching
- Grade distribution for all courses taught

3.2 Teaching improvement efforts

- Mid-term surveys
    - Original "by-hand" survey: for CS2402 in 2005
    - Survey using *surveymonkey.com* for cs5303 for spring 2011, and the results
- Evidence from my website:
    - Archives of teaching activities (2003 to 2007): http://www.cs.utep.edu/mceberio/teaching
    - Recent teaching activities (2010-2011) with interaction from students:
      CS5350: http://www.martineceberio.fr/teaching/CS5350 (fall 2010);
      CS5303: http://www.martineceberio.fr/teaching/CS5303 (spring 2011).
- Documents used in class:
    - Students' daily form
    - Syllabus to sign
    - Lecture plan uploaded on website during semester as an update to initial plan for CS5350 during fall 201
- Survey to determine the need for CS summer classes in 2008

3.3 Curriculum development

- Syllabi
    1. CS 2402: fall 2005
    2. CS5303: fall 2006, spring 2011
- Change in the lecture plan of CS1401: syllabus with objects taught early, syllabus with objects taught late (change proposed in collaboration with Mary Kay Roy)
- Examples of labs developed for CS2402 (zipped files): fall 2005, fall 2007, fall 2008.
- Examples of assignments:
    1. List of projects for CS5350 during fall 2010
    2. Tutorial assignment for CS5303 during spring 2011 showing the different parts assigned to groups and to individual students

3.4 Letters from peers who have observed classes or reviewed course materials

1. Dr Francois Modave (associate professor at Texas Tech University Health Center; at UTEP at the time of our co-teaching experience), with whom I co-taught Artificial Intelligence in Spring 2004;

2. Mary Kay Roy (lecturer at UTEP in computer science), who was teaching CS1401 at the same time as I was: we had weekly meetings with our teaching assistants and lengthy discussions about the curriculum of this course. She was able to review extensively material that I prepared for this course.

3. Dr Maria Alvarez (professor at El Paso Community College) is in charge of the summer research projects program in which I am involved as faculty advisor and in which I have held seminars.

3.5 Letters from research students

1. Carlos Acosta, former Master's student (graduated in 2007)

2. Shubhra Datta, current Master's student (expected graduation date: Fall 2011)

3. Mario Bencomo, former Master's student (now PhD student at Rice University)

4. Christian Del Hoyo, current Master's student (expected graduation date: Spring 2012)

5. Luis Carlos Gutierrez, current undergraduate student (expected graduation date: Spring 2013)