Statement of Teaching
Fuhua (Frank) Cheng

A. Teaching

1. Reflective Statement

My teaching has three goals: (1) to make sure that students understand the course materials well, (2) to make sure that students know how to use/apply the materials they learn in class, and (3) to make sure that the students are evaluated fairly.

To achieve the first goal,

- I use a motivation-driven approach in my lecture, i.e., I give the background and applications of the result first, and then explain the theory that leads to the result.

- I give many examples in my notes (see, e.g., my CS535 and CS633 notes).

- I encourage the students to be involved and active during lectures. (However, for those who find it difficult to do so, I welcome them to ask questions or make comments after class.)

- I make all my class notes available on line so that, instead of copying my notes in class, they can closely follow my lectures on course materials. (My class notes such as CS633, CS631, CS535, and CS321 have been used by some of my students and colleagues in their own classes.)

To achieve the second goal,

- I give applications for each covered result.

- I provide students with sample programs to help them initiate their work (see my web pages).

- I encourage students to share their ideas.

- I award students with extra credit if they have new ideas on assignments.

To achieve the third goal,

- I always let the students know at the outset of the course exactly what is expected. I clearly specify the requirements of the course such as materials to be covered, grading policy, program requirements (see, e.g., my CS535 and CS633 Programming Requirements), late penalty, and numerical scale to be used in the evaluation, on the first day of class.

- I provide students with solution sets for all homework assignments and exams (see my web-pages) so they would not only know the solutions to the questions, but also know if their works are graded fairly.

I have different expectations for graduate and undergraduate students though. For an undergraduate or programming-extensive course, the students are evaluated based on two subjects: programming assignments and tests. I usually put equal weight on both sides so the effort of the students can be evaluated fairly. However, I encourage students to do critical thinking and they get

extra credit if they do so such as providing comments or improvement on existing techniques. For a seminar course or advanced topics, I evaluate the students mainly based on the quality of the work, i.e., I will follow the numerical scale, but a student with good ideas will get more extra credit than the ones who don't.

2. Courses taught recently

Course	Title	Level
CS633	Computer Animation	G
CS535	Intermediate Computer Graphics	G
CS321	Intro. Numerical Methods	U
CS275	Discrete Mathematics	U

3. Student Evaluation (recent three semesters)

		2006	2006	2007	2007	2008
		Spring	Fall	Spring	Fall	Spring
		633	321	275	535	633
	Enrollment	13	26	34	24	9
	Number of answers	8	16	23	17	5
1	Material/grading outlined	3.4	3.6	3.3	3.6	3.8
2	Textbook	3.4	2.7	2.9	3.4	3.6
3	Supplemental reading	3.5	3.6	3.3	3.6	4.0
4	Exams reflection	3.4	3.8	3.6	3.7	4.0
5	Grading fair	3.5	3.6	3.6	3.6	4.0
6	Distributing assignments evenly	3.5	3.4	3.5	3.8	4.0
7	Assignments graded promptly	3.3	3.5	3.7	3.6	4.0
8	Grading including comments	3.4	3.3	2.9	3.5	4.0
9	presentation	3.6	3.7	3.3	3.5	4.0
10	Knowledge of subject	3.6	3.8	3.6	3.8	4.0
11	Availability	3.5	3.9	3.5	3.6	3.8
12	Answer questions	3.4	3.7	3.4	3.5	4.0
13	Stimulate interest	3.1	3.6	2.8	3.5	4.0
14	Encourage participation	3.3	3.4	3.4	3.5	3.8
15	Respect viewpoints	3.6	3.2	3.2	3.5	3.8
16	Ability to analyze	3.3	3.4	3.3	3.5	4.0
17	Solve problems	3.3	3.4	3.2	3.5	4.0
18	Understand concepts	3.4	3.4	3.2	3.8	4.0
19	Read further	2.9	3.	2.6	3.6	4.0
20	Value of course	3.3	3.8	3.2	3.6	4.0
21	Quality of teaching	3.4	3.9	3.5	3.8	4.0

B. Advising

1. Reflective Statement

My goal in advising a project or a thesis is to ensure that the student knows how to set up a target and how to develop a strategy to reach that target. The target must be very specific and the strategy must be practical. The idea is to let the student know how to play a game by him/her-self and to what extent that he/she should keep trying before giving up. I help the student with the technical part initially after he/she has successfully performed background study, target selecting, and strategy design.

My advising in pre-registration meetings with the students will ensure that (1) students understand the requirement of a computer science major in addition to the college and university requirements, and (2) each student develops an appropriate course plan for each semester. This will be achieved by going through a checklist with the student and showing him/her the best combination for the semester.

2. Students Advised - Post Docs (past three years)

- **Jianbao Wu**

  Qualification: *PhD, Mathematics, August 2007, University of Georgia*

  Thesis: *Spherical Splines for Hermite Interpolation and Surface Design*

  Area of Research: *Subdivision surface based Offsetting*

  Starting Date: *November 2007*

  Supported Period: *November 2007 - present* (supported by NSF grant DMI-0422126).

  Publication: *None*

3. Students Advised - PhD Students (past three years)

- **Shuhua Lai**

  Area of Research: *Subdivision surface based one-piece representation*

  Starting Date: *January 2003*

  Supported Period: *January 2003 - May 2006* (supported by NSF grant DMS-0310645).

  Current Status: *Assistant Professor, Virginia State University*

  Publication: *six journal papers, seven conference papers*

  Graduation Date : *September 2006*

- **Fengtao Fan**

  Area of Research: *Shape Reconstruction using Subdivision Surfaces*

  Starting Date: *August 2006*

  Current Status: *passed depth exam*

  Publication: *one journal paper, four conference papers*

Supported period: *August 2006 - present* (supported by NSF grant DMI-0422126).

Anticipated Graduation Date : *December 2009*

- **Jianzhong Wang**

  Area of Research: *Mesh based Shape Reconstruction with Applications in Mouth Reproduction*

  Starting Date: *January 2008*

  Current Status: *passed no exam yet*

  Publication: *one conference paper (in preparation)*

  Supported period: *January 2008 - present* (supported by KSTC grant 144-401-07-015).

  Anticipated Graduation Date : *December 2010*

Students Advised - MS Students (past three years)

- **Gang Chen**

  Masters Thesis: *Subdivision Depth Computation for Extra-ordinary Patches*

  Publication: *three journal papers*

  Supported period: *August 2004 - December 2005* (supported by NSF grants DMS-0310645 and DMI-0422126)

  Date of graduation: *December 2005*

- **Jiaxi Wang**

  Masters Project: *Shape Reconstruction using Doo-Sabin Subdivision Surfaces*

  Publication: *one journal paper, three conference papers*

  Supported period: *August 2007 - December 2007* (supported by KSTC grant 144-401-07-015)

  Date of graduation: *March 2008*

- **Conglin Huang**

  Masters Project: *Curvature Estimation for Triangular Meshes based on Local Parametrization*

  Publication: *one journal paper, three conference papers*

  Supported period: January 2007 - present (supported by KSTC grant 144-401-07-015)

  Date of graduation: December 2008.