

Programming For Success

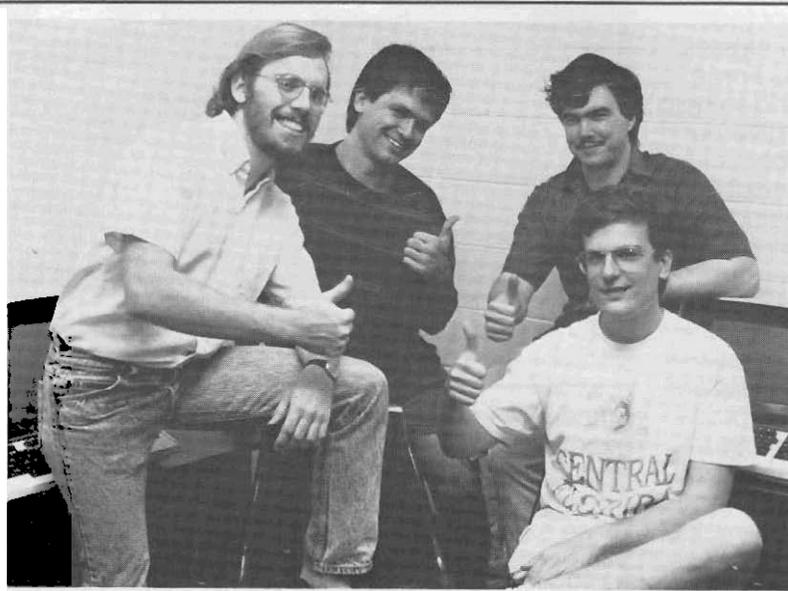
Computer Team Places in International Contest

by Sarah D. André

The University of Central Florida computer programming team returned from the 15th Annual Association for Computer Machinery Scholastic Programming Contest ranked fifth in the world, reaffirming its world-class status. The student

programmers finished the grueling five-hour competition behind Stanford University, the Free University (Amsterdam, the Netherlands), Virginia Tech and Victoria University of Wellington (New Zealand), which placed first through fourth respectively.

UCF earned a berth in the 1990-91 international tournament by beating 50 other universities in the Association for Computer Machinery Southeastern regional competition last November, ahead of powerhouses such as Auburn, Clemson, Mississippi, Vanderbilt, Georgia Tech, and Duke. The international competition pitted UCF against 22 other first- and second-place regional winners from around the world, including Harvard University, Brown University, the University of Pennsylvania, Columbia University, the University of



The University of Central Florida computer programming team placed fifth worldwide in the 15th Annual Association for Computer Machinery Scholastic Programming Contest. Team members are, clockwise from left, Christopher Gouge, Mark Schnitzius, Peter Popovich, and Robert Franceschini.

Virginia, and the University of Texas.

The UCF student programming teams have placed consistently in the top three positions in regional competition since their first contest nine years ago.

UCF has competed in two other international competitions, placing fourth in 1986 and second behind Stanford University in 1987. "When you realize that second in the international competition really means second in the world, you can't be too unhappy with that kind of a finish," said Ari Orooji, professor of computer science at UCF and faculty advisor for the computer programming team since 1989.

The key to UCF's consistent success has been, like any competitive sport, a carefully thought-out game plan that is perfected through long hours of

practice. "We try to duplicate everything that happens at the regional and international competitions," said Orooji. "Our objective is to eliminate surprises so the team can concentrate on solving programming problems."

Two teams of four, plus two alternates, are selected every year

in September from the top ten finishers in individual competition. Order of finish doesn't dictate team composition as much as specific programming

"Our objective is to eliminate surprises so the team can concentrate on solving programming problems."

expertise. Each problem in the competition has a different application: engineering, geometry, algorithms, or simulation. "We don't want all four students on each team to have expertise in the same area," notes Orooji. The UCF programming

team that placed first in regionals this year includes Sophomore Peter Popovich, Senior Robert Franceschini, and Postgraduate Student Mark Schnitzius, all computer science students, and Junior Chris Gouge, an engineering student.

Every Saturday the first-place team, the second team, the two alternate members, and the coaches get together for eight grueling hours of practice. The first hour is spent reviewing strategy and tactics. Then the two teams face off in mock competition, with alternates and team coaches acting as judges. The teams must solve as

"If [the judges] say two plus two is five, you have to work with that decision and go on from there."

many of eight problems as they can in five hours - the time allotted during the international competition. The computer science faculty design problems similar to those encountered in competition. "We don't know exactly what the problems will be, but from experience we do know what types we can expect to see," noted Orooji.

Each team has only one computer, making efficient computer time management a critical factor in creating a winning strategy. Schnitzius is first at the computer with the first "banger," a fairly simple program that can be solved quickly. Gouge, the engineering student, knows he will solve the text or report-generating program, usually the most technically difficult and complex. He and his teammates know that he will probably spend most of the contest time on this one problem. Popovich and Franceschini ferret out the graphing (linking) and algorithm problems. While Schnitzius finishes with his first solution, the others begin solving their problems on paper.

Stress and frustration mount as the competition progresses. Judges may issue rulings that don't make sense. Arguing wastes time and increases frustration, so the students learn to accept all judgments. "If they say two plus two is five, you have to work with that decision and go on from there," said Orooji.

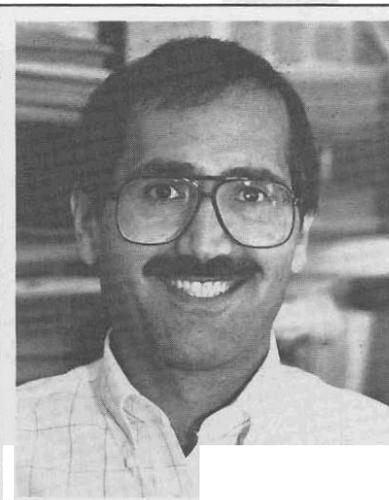
Juggling computer time is a source of tension. Most programmers work out solutions directly on the computer. But during competition, the students must work out problems first on paper, then enter solutions when their time on the computer comes up in five-minute increments. "If one programmer is close to a solution and is on the computer, it's hard to yield his time to someone else," explained Popovich.

Tempers can flare. The team's intensive practice sessions help the students deal with these kinds of frustrations.

"No matter what we do, the pressure is there," Orooji noted. "There are TV cameras and bright lights. People are coming and going throughout the competition. Major corporations like AT&T, IBM, and Martin Marietta want to talk to students about employment after graduation. The students have high expectations, and they know that I'm watching the scoreboard."

Each student has his own methods on how to approach programming. But over the past seven months of practicing and competing with each other, they have learned to cooperate and work together. "It's self-defeating if we can't respect each other's idiosyncrasies," said Popovich. They have developed individual techniques of dealing with the intense stress. Franceschini and Gouge play racquetball. "Playing for an hour before practice or competition helps us relax and work out our nervousness," said Gouge.

Popovich's technique is somewhat less common. When tensions become intolerable he grabs his yo-yo. "I concentrate all of my energies on this yo-yo for five minutes, then when I come back into competition I can focus on



Computer Science Professor Ali Orooji has been the faculty advisor for the computer programming team since 1989.

whatever problem I'm working on," said Popovich. His fellow programmers applaud his five-minute hiatus as well worth the time away from programming. "If he has to blow off steam, it's better that he does it right away," said Gouge. "Otherwise, it's not good for the team."

To avoid time-consuming delays they review each other's programs and create data to test solutions before they are submitted to the judges. "It's much better to test a solution first than to have it come back because it doesn't work," explained Popovich. "We try to think of the different ways that the judges will test it, which often involves exceptions that may not work." There may not be enough time, either, to look for an error and correct it if a solution comes back during the last hour of competition. That could cost the contest.

The long hours of practice are over, at least for this year. In the last seven months, the computer programming team has logged at least 120 hours of practice and has solved about 150 programming problems. Out of 350 colleges and universities that start out in the competition at the regional level, UCF's showing in the San Antonio contest places them in the top 1.5 percent worldwide.