

# Computer Theory Taught By 'Adam'

At Texas A&M, electrical engineering and computer science graduate students have designed and built a computer — a first for them — and named it Adam.

In this instance, Adam stands for automatic digital arithmetic machine. Assistant Professor Thomas Rhyme said the computer is limited in accuracy and flexibility, but noted that its construction has helped students grasp basics of computer theory.

"Truthfully, the machine is an all-student project," Rhyme remarked.

Seven graduate students designed and constructed the computer in six hours of class and identical time in the laboratory.

"Some of 'em fudged a little," Rhyme grinned. "They worked on their own over the weekend and spent extra time in the lab."

The student engineers attacked the problem in three divisions to simulate an industrial situation.

John Berk of Nanticoke, Pa., Edward Travis of San Antonio and A. S. Rao of Bangalore, India, tackled the arithmetic section.

Controls were the assignment of James Byram and Wallis McMath of Bryan and Augustine Chang of Dallas. Sandy A. Scalco of Meridian, Miss., worked on

input-output. That's data, instructions and computed results.

Rhyme said the computer can handle nine basic instructions. It adds, subtracts and multiplies.

"We plan to add a little intellect to the machine each semester," Rhyme pointed out. "Maybe next year we can program a computer to multiply automatically, reducing time now required."

Adam, like some women content about their husband, doesn't have a memory. A student fulfilled the memorization chore this spring. Even he had to write bits of information on paper and feed the knowledgeable Adam.

Like all men, Adam is not long for this world. He's to be torn to pieces this fall. From his parts, possibly like Adam's rib, a fancier machine will be built by future EE365 classes.

Adam is worth about \$2,500 compared to almost \$1 for chemical ingredients of a man in this inflation-oriented era.

There's no doubt about it. The more sophisticated machine to be constructed next year, one that has a good memory and does everything but sweep out, already has its name ready and waiting.



**DETERMINED MONEY-MINDER**  
Juan Lopez started his college career with \$5 in his pocket and recently graduated with honors here and with money to spare in the bank.

**Bolyard To Chair MSC Camera Club**

Dale Bolyard of La Marque will chair summer activities of the Memorial Student Center Camera Committee.

Summer meetings in the same MSC rooms will be on June 10 and 24, July 15 and 29 and Aug.

12, Black added. Bolyard is a senior architecture major. Chairman Bill Black of Pratt, Kan., said Bolyard will assume duties after the committee's last semester meeting Monday, at 7:30 p.m. in Rooms 3B and 3C of the MSC.

# Student Makes Good Despite Money Problems First Year

The popular image of the college student who frequently writes home for a handout from Dad doesn't apply to Juan De Dios Lopez of San Diego, Texas.

Here is a young man who not only has worked his way through college — Texas A&M — but has a small sum in the bank after all expenses.

Couple this with the fact that he has won the designation of "Distinguished Student" every semester, and he fills the best requirements for a hometown-boy-makes-good type of story.

LOPEZ WAS graduated May 25 with honors and with a BS degree in entomology, the study of insects. In those four years, his grade point ratio averaged 2.68 out of a possible 3. This means that his grade record each semester was dominated by A's.

He can look back on a college career that has known triumphs and despair, tempered with hard work.

The fledgling entomologist is the youngest son of Mr. and Mrs. Juan De Lopez of San Diego. He has a sister, Maria Herminia, and a brother, Arnold.

With some financial help from

his father and brother, Lopez came to Texas A&M in the fall of 1964. Although he managed to get a job as a waiter in Duncan Dining Hall on campus, things darkened in a hurry.

"I HAD BEEN here two weeks and had \$5," he recalled. "I was homesick, discouraged and about ready to go home when Dean Potts called me in and presented me a Sears Foundation Scholarship of \$300."

The award was the turning point.

Dr. R. C. Potts is associate dean of agriculture at A&M and spends considerable time looking out for promising students with money troubles. More than a few Aggies, penniless at the time, owe their college educations to jobs and scholarships arranged by the dean.

The following summer, Lopez found work at the U. S. Department of Agriculture Entomology Research Division at Brownsville.

CAME HIS sophomore year, the student returned to his waiter job in the dining hall and found himself the recipient of a Darnell Scholarship of \$900 at \$300 a year. It was back to the

USDA at Brownsville the next summer.

As a junior, he waited tables again. At the end of the school year, he was named head waiter. In his senior year as head waiter, he met many dignitaries who came to eat with the Corps of Cadets, including A&M President Earl Rudder. The John Charles Koerth, Jr., Scholarship of \$300 was awarded him during this period.

Lopez must have been a wizard at budgeting his time. While holding down the head waiter job, he also went to work at the university's Entomology Research Laboratory.

The entomologist figures he has earned about \$4,000 in his four years at A&M.

As a student, Lopez was a member of the A&M Corps of Cadets, Entomology Club, Freshman Agricultural Society, Phi Kappa Phi, chancellor of Alpha Zeta, secretary of the Agricultural Council, interpreter for the Student Conference on National Affairs (SCONA), and is listed in "Who's Who in American Universities and Colleges."

During the semester just ended, he was one of four Merit Award recipients for seniors in the College of Agriculture.

Dean Potts said he remembers when Lopez came to his office for consultations. For maximum use of time, the student always brought a book or class notes to study while he waited in the outer office to see the dean.

"It's this kind of determination and spirit that has led to Juan's success," Potts pointed out. "I think that just about any young man who is willing to study hard and work and save his money can get a college education."

# Shrimp Harvesting Aided By 'Sweeper'

Shrimp de jonghe, souffles, creole, casseroles, hors d'oeuvres and other shrimp dishes may be come common menu choices with the entry of aerospace, mechanical and civil engineering into shrimp operations.

Texas A&M graduates in those fields have a new idea for removing the whiskered crustacean from the ocean floor.

They've contrived through systems engineering a "bottom oriented shrimp harvester" the four students believe will more than double production of present shrimping methods.

"BOSH," as they call it, is the product of the interdisciplinary thinking and research of Bart Dennehy of College Station; Allen de Steiguer, Lampasas; Conrad Dudek, Detroit, Mich.; and Robert Flechtner, Rensselaer, N. Y.

THE HARVESTER is designed to replace nets on shrimp trawlers' tow cables. It takes advantage of the fact that shrimp feed at night and burrow during the day.

BOSH will allow shrimpers to work 24 hours a day. Shrimp boats using nets must work only in darkness, when shrimp leave ocean floor burrows to feed.

"Research on the feeding and burrowing habits of shrimp will be required before final designs are drawn," noted Dr. C. A. Rodenberger, instructor of a systems engineering course in which the harvester was designed.

With proper research and planning, BOSH should work best in daylight when all shrimp are burrowed, the graduate students figure.

"It has been estimated that two shrimp are burrowed for every shrimp that is feeding during the night," their report states. "Yet, shrimpers are content to bypass two-thirds of the shrimp over a given area by trawling for shrimp which are feeding."

AT NIGHT, lights on the ship ahead of the harvester would cause shrimp to burrow where they will be more accessible to the machine.

If accepted, the ocean-bottom operating gadget will be the shrimping industry's first notable equipment improvement in over 40 years. Shrimp nets get torn on underwater obstructions, are

non-selective in catch, require considerable maintenance and must be hauled to the surface for unloading.

Dennehy, de Steiguer, Dudek and Flechtner believe many shrimping operations — from locating shrimp to dressing and refrigerating the delicacy — could be modernized.

Shaped much like the old wheeled floor sweeper, their steel alloy harvester employs several engineering principles to increase shrimp harvest.

BOSH HAS a series of tapered holes on its front edge to force a jet of water — produced by forward movement of the vehicle — onto the sea floor. The agitation, they believe, will cause shrimp to pop from the ocean floor into the water to be swept up by a 15-foot wide rubber-tipped mouth.

Channeled into a bag-type receptacle on the back of the machine, the shrimp pass over another series of holes that "grade" the harvest, returning the smaller crustaceans to the ocean floor.

The remotely detached and replaced shrimp receptacle is designed to be lifted to the surface for dumping while the trawler and BOSH are under way. Like an airplane wing, the receptacle depends on forward movement and aerodynamic principles of lift, drag, gravity resistance to surface its load. BOSH's towing hawser serves as a guide and a separate towline for added lifting force.

DESIGNERS of the unique system are Ph.D. candidates in various fields with backgrounds in civil engineering and physics. In the systems engineering discipline lines for information in other areas. Consultation with A&M scientists and engineers in structural mechanics, hydraulics, ocean engineering, biological science and oceanography preceded design selection.

They believe BOSH will be safer to operate and relatively maintenance free. Research indicates it won't damage the catch and will leave the ocean floor undisturbed for future shrimp growth and harvesting.

But primarily, the harvester has the capability of catching two-thirds more shrimp than a net.

Hors d'oeuvres, anyone?

# Drawing Workshop Slated This Week

Thirty teachers from 18 Texas junior colleges are participating in a technical drawing workshop this week at Texas A&M.

Purposes of the sessions are to discuss common problems and to suggest means of improving content of course programs. Dr. James H. Earle, associate professor in charge of Engineering Graphics, said.

Included in the program are talks by R. D. Furry, Ling Temco Vought Aerospace Corporation, Bryan engineers Jack Godwin, John W. Hall, and Bill Kelle, and Texas A&M faculty members including Assistant Engineering Dean Clifford Randall and Profs. North Bardell, Michael P. Guerard, Richard Vogel and Earle of the Engineering Graphics Department.

COL. FLOYD A. LAMBERT of the Electronics Institute and Professor Edward Romieniec of the Department of Architecture also will address the junior college instructors.

The participants will tour the window manufacturing and heavy equipment divisions of Alenco Engineering Corporation, the human factors lab and other facilities of the Industrial Engineering Department, the Electronics Institute, and the Department of Architecture.

Discussions will be conducted on such subjects as brain-storming, nomography, quiz administration and grading, design by computer, team projects, course ideas, and the Visiting Engineer Program at Texas A&M University.

Ben Wickersham of Angelina Junior College, Charles Potter of Henderson County Junior College, Billy Windham of Southwest Texas College, and Texas A&M graduate student Dennis Nystrom will give demonstrations and discussions on teaching methods.

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