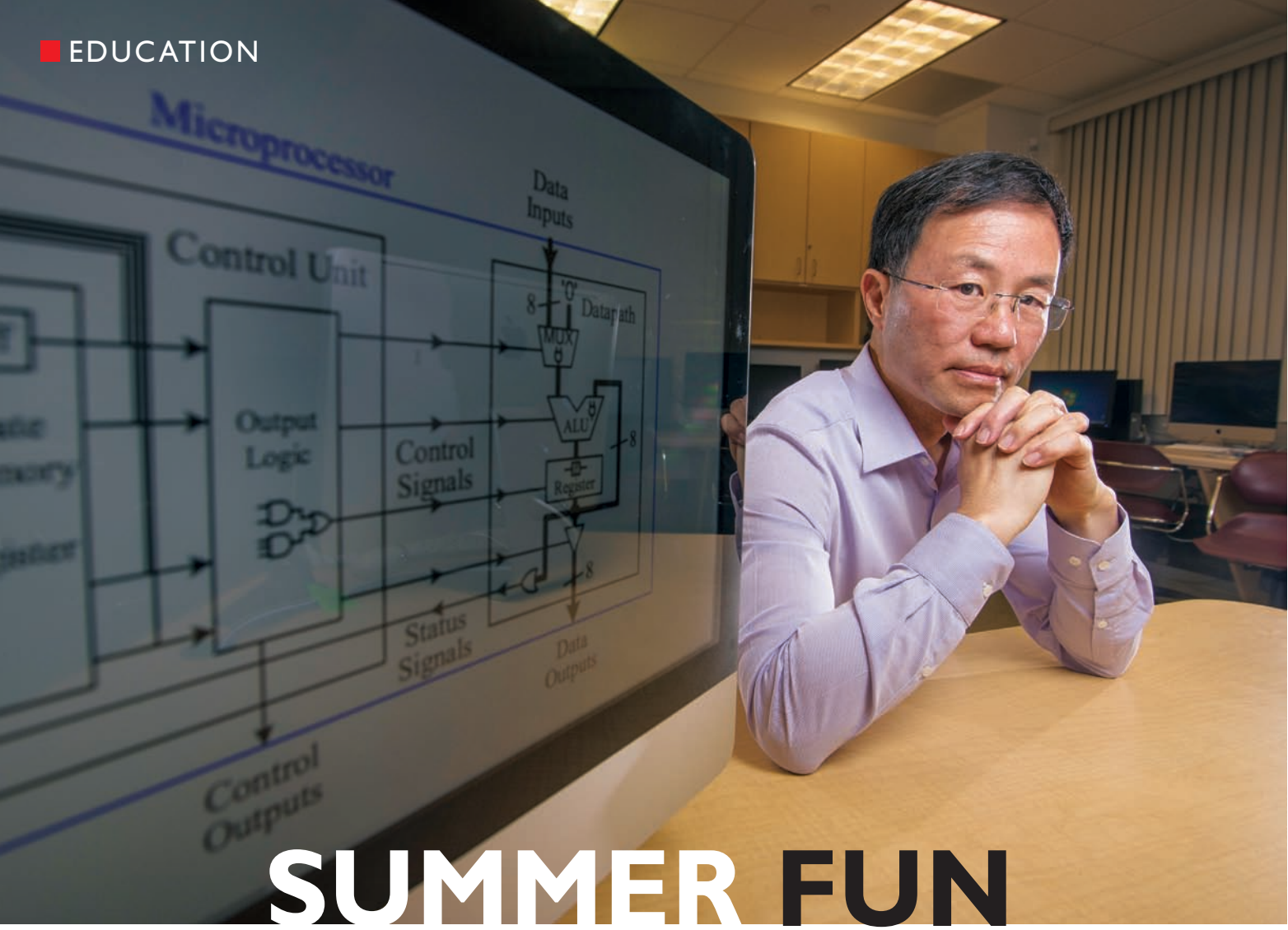

SUMMER FUN THAT REALLY COMPUTES

Written by Amy Bentley
Photos by Frank Perez

AS A CHILD, Enoch Hwang, above, was fascinated with electronic gadgets and automated devices. As an adult, he turned his childhood passion into a career as a professor at La Sierra University, sharing his knowledge and skills with not just students but people of all ages.

This summer for the first time, Hwang will be expanding his reach as he teaches a Robotics Summer Camp at La Sierra that will show campers ages 9 and older how to do simple computer programming, electronics and analytical thinking. The camp, which runs from 9 a.m. to noon June 13-24, also will feature a robot-building competition.

"It's been my passion to work with electronics and robotics, even when I was a kid," said Hwang, chairman of La Sierra's Computer Science Department. "When I was young, I liked to build automated little gadgets. Now I'm at a point where I know how to do it, so let me teach what I know."

Hwang says it's important for kids to think logically.

"They'll learn simple computer programming concepts and then how to connect to simple external components like colored lights, sensors and a motor and be able to control the motor if it's something that will move," he said.

Hwang's interest in teaching robotics extends beyond the La Sierra campus. Besides leading a robotics club at La Sierra where college, high school and junior high school students (and even a retiree) interested in robotics meet regularly to build fun electronic gadgets, he also helps at Hillcrest High School in Riverside with the campus computer coding club.

Campers don't need previous robotics experience. To build the robots, they'll be using a kit, which comes with an Arduino microcontroller board, USB cable, LED lights, buzzer, push button, sensors, motor and other components.

"It's easy to use for kids with no background (in robotics)," Hwang said.

Robotics are immersed in many aspects of daily modern life, says Hwang, including through such items as garage-door openers, microwave ovens and traffic lights.

"The list goes on and on. They are really controlling our lives in a sense," he said.

> 'The brains behind them is really the programmer or the computer engineer. Lots of employers are looking for these skills.'

For those items to become better and more user-friendly, it will require people who know how to program them, he says.

"The brains behind them is really the programmer or the computer engineer. Lots of employers are looking for these skills," Hwang said, adding that the camp is an effective way to get kids interested in robotics at a young age so they might pursue the field later in their educations.

A report published by Business Insider in May 2015 predicted a $1.5 billion market for consumer and business robots by 2019.

Hwang earned a Ph.D. in Computer Science in 1999 from UC Riverside, doing research in power optimization for microprocessor circuits. He teaches students how to design and work with microcontrollers, and he wrote a college-level textbook, "Digital Logic and Microprocessor Design with Interfacing." The second edition will be released later this year.

A recent project that Hwang has undertaken with his college students involves building a robotic arm that can be controlled from anywhere in the world with an Internet connection using a standard Web browser. From a Web page, students can control the movement of the arm, such as lifting it and turning it, to pick up metal balls and other items.

Robotics Summer Camp
When: June 13-24, 9 a.m. to noon
Where: La Sierra University, 4500 Riverwalk Parkway, Riverside
Information: www.robotsforfun.com or email info@robotsforfun.com

Dr. Enoch Hwang works with a student at La Sierra University.