Electrical engineering graduate student Simeon Trieu took top honors recently at the 24th Annual California State University (CSU) Research Competition, held on April 30 and May 1 at San Jose State University. Trieu, an electrical engineering graduate student from San Jose, was awarded first place in the engineering and computer science graduate division for his research study on methods to maximize the efficiency of gallium nitride light-emitting diodes (LEDs).

Trieu's achievement at the CSU contest comes on the heels of his winning a National Science Foundation's East Asia Pacific and Summer Institute's Fellowship for his research on crystal LEDs. He has authored or coauthored nine papers while at Cal Poly, including "Optimization of Top Polymer Gratings to Improve GaN LEDs Light Transmission," "Mode Pattern Analysis of Gallium Nitride-based Laser Diodes" and "Light Extraction Improvement of GaN-based Light Emitting Diodes using Patterned Undoped GaN Bottom Reflection Gratings."

Trieu's thesis advisor, Dr. Xiomin Jin, notes that Trieu's approach to LED research is valuable in the industry: "First, he approaches a problem historically and tries to discover how each component works in the overall picture," explains Jin. "Second, he targets an area of the LED to optimize, such as the grating structure, and delivers several alternative methods of optimization; and finally, Simeon uses his refined ability to articulate scientific details into understandable reports that most engineers can read easily."

Despite this impressive academic output, Trieu has also started a business, Trieu Solutions, a small Central Coast business serving IT infrastructure needs of medical offices for accounting and medical imaging (i.e.: CT, MRI, plain film x-ray) systems. His experience bringing together cutting edge technology with basic needs may be a reason his is concurrently working toward both a master's in electrical engineering and a master's in business administration (MBA). Trieu has also served as a teaching associate for electrical engineering professor Dr. Xiaomin Jin for over two years.

The CSU Research competition "showcases excellent research conducted by CSU undergraduate and graduate students in the full range of academic programs offered by the CSU." At the competition, students present plans and university-level research "before juries of professional experts from major corporations,
foundations, public agencies, and colleges and universities in California." Only ten presentations were admitted from each of the 23 CSU campuses.

In addition to Trieu, Cal Poly had four student winners among its entries at the contest. The three first-prize winners and one second-prize winner were among approximately 205 students from 21 campuses who took part in this year's competition.

Cal Poly entries covered a wide range of topics, from gender bias in online role-playing games, to mathematical analysis of ocean currents and the use of computing techniques to evaluate the impact of news articles and sources on the price of individual stocks. Also representing Cal Poly Engineering were computer science undergraduate students Jason Anderson, Dominic Camargo, Ben Davini, and Brian Oppenheim.

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