

Information Theorist Named to QUALCOMM Endowed Chair at UC San Diego

Appointment Coincides with Start of Weeklong International Conference at UCSD

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Doug Ramsey

Alon Orlitsky, the inaugural holder of the QUALCOMM Endowed Chair in Information Theory and its Applications.

The University of California, San Diego today announced that Alon Orlitsky has been appointed the first holder of the QUALCOMM Endowed Chair in Information Theory and its Applications.

The chair in UCSD's Jacobs School of Engineering is one of five pledged by QUALCOMM through its initial \$15 million corporate commitment to the UCSD division of the California Institute for Telecommunications and Information Technology (Calit2).

"Endowed chairs make it possible for the Jacobs School to attract and retain faculty of the highest caliber, and Professor Orlitsky exemplifies this faculty excellence that makes the Jacobs School one of the top research engineering schools in the country," said Jacobs School Dean Frieder Seible. "He has also played an important role outside the classroom in launching an initiative within Calit2 that positions UCSD as a center of excellence in a field -- information theory -- that underpins the digital revolution."

The Information Theory and Applications (ITA) Center was launched in early 2006, with Orlitsky as its founding director. "Our goal is to study the fundamentals of information theory and extend their applications beyond traditional areas such as communications and data storage," said Orlitsky. "But as a research-and-resource center, we also reach out and bring in researchers from around the world."

As part of this effort, the center is organizing the second annual ITA Workshop to be held at UCSD, Jan. 29-Feb. 2. The workshop will be attended by over 500 participants and will feature more than 270 talks in diverse areas such as communications, data compression, machine learning, statistics, quantitative finance, and bioinformatics. "Typically, workshops focus on just one or maybe two of these topics," noted Orlitsky. "The ITA workshop brings together researchers who are interested in different applications, but share similar approaches and tools."

"Information theory has transformed the world and influenced advances ranging from digital cell phone technology to direct-broadcast satellite transmission," said Dr. Irwin Mark Jacobs, a former professor of engineering at UCSD who went on to found two major U.S. companies based on principles from information theory -- Linkabit and QUALCOMM. He was on hand for the official announcement Jan. 28 of the endowed chair appointment. "Professor Orlitsky's expertise and research are at the intersection of theory and its practical applications, and we hope that this endowed chair will help him continue to engage students in this seminal field while also leading the ITA Center as a proactive force in spreading awareness of the potential real-world benefits of information theory."

Professor Orlitsky's research concerns information theory, compression, probability estimation, and machine learning. Among his better-known results, Orlitsky showed that nearly optimal information transfer can be achieved with just two communication rounds, a result that won the 1992 IEEE WRG Baker Prize Paper Award for the most outstanding paper in any IEEE publication. More recently, Orlitsky and two of his graduate students, Narayana Prasad Santhanam and Junan Zhang, extended IJ Good and Alan Turing's WWII work on breaking the Enigma cypher, to derive asymptotically optimal probability estimation and data compression algorithms. These results appeared in *Science* magazine and won the 2006 IEEE Information Theory Outstanding Paper Award.

Orlitsky holds joint appointments in the Jacobs School's Electrical and Computer Engineering as well as Computer Science and Engineering departments. He joined the UCSD faculty in 1997 after working as a member of the technical staff at Bell Laboratories' Mathematical Sciences Research Center and as a quantitative analyst at the investment firm D.E. Shaw & Co. Orlitsky received B.Sc degrees in Mathematics and Electrical Engineering from Ben Gurion University in 1980 and 1981, respectively, and M.Sc. and Ph.D. degrees in Electrical Engineering from Stanford University in 1982 and 1986.

With Professor Orlitsky's appointment, UCSD has now filled four of the five chairs pledged by QUALCOMM through Calit2. In 2003, computer engineering professor Rajesh Gupta assumed the QUALCOMM Endowed Chair in Embedded Microsystems, and the chair in Communications and Technology Policy went to Peter Cowhey, dean of UCSD's Graduate School of International Relations and Pacific Studies. Since 2004, the QUALCOMM Endowed Chair in Telecommunications and Information Technologies has been occupied by Ramesh Rao, director of the UCSD Division of Calit2.

"UCSD has a world-class group of faculty with extensive expertise in information theory," noted Calit2's Rao, himself a former member of the governing board of the IEEE Information Theory Society. "The ITA Center is now creating a framework for research collaboration that transcends what any single investigator can achieve, and this endowed chair is a vote of confidence in Alon Orlitsky and his tenure at the helm of the first research center of its kind to harness advances in information theory for the benefit of California, the nation and the world."

Media Contact: Doug Ramsey, 858-822-5825

