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Contextual Robotics Institute Director Gets Qualcomm Chancellor's Endowed Chair in Robotic Systems

Professor Henrik Christensen is the inaugural holder of the chair

Henrik Christensen, an internationally renowned expert in robotics, has been appointed as the inaugural holder of the Qualcomm Chancellor's Endowed Chair in Robotic Systems at the University of California San Diego.

The chair was made possible by a generous \$1 million gift from Qualcomm Incorporated and a \$500,000 match from the campus Chancellor's Chair Challenge, a program created to support the recruitment and retention of quality tenured faculty. Christensen leads the Contextual Robotics Institute at UC San Diego and serves as a professor in the Computer Science and Engineering Department at the Jacobs School of Engineering. This gift contributes to the Campaign for UC San Diego.

"This appointment acknowledges Henrik Christensen as a globally recognized and distinguished faculty member with a record of technical excellence in advanced robotics and as a researcher whose work has had a significant impact on industry," said Chancellor Pradeep K. Khosla.

Almost all funding researchers receive is tied to deliverables, Christensen said. By contrast, endowed chair funds give researchers flexibility and freedom. The funds allow the Contextual Robotics Institute to build community here on campus, for example by organizing recruiting events and seminars.



Henrik Christensen, the director of the Contextual Robotics Institute, holds the new Qualcomm Chancellor's Endowed Chair in Robotic Systems

“I am grateful to Qualcomm for its foresight in making this gift,” Christensen said. “This will allow us to graduate engineers even better equipped for the workplace and continue to produce in-depth, cutting-edge robotics research.”

Christensen came to UC San Diego in 2016 as a professor in the Department of Computer Science and Engineering at the UC San Diego Jacobs School of Engineering. As director of the Contextual Robotics Institute, he is focused on building and strengthening the robotics ecosystem in San Diego and the larger CaliBaja cross-border region.

San Diego is a leader in many key areas that are converging in robotics, including electronics, wireless, data science, biotech, defense, aerospace, medical devices, materials and medicine. San Diego also has the biggest healthcare system in California.

UC San Diego conducts robotics research in all these areas, from coordinating UAV (Unmanned Aerial Vehicle) swarms, to developing grippers and robotics hands, to investigating how robots can better interact with humans in health care and factory settings. This will lead to many fruitful partnerships, Christensen said.

“Qualcomm’s generous support is critical to our efforts at UC San Diego to ensure that the San Diego region emerges as a global robotics leader,” said Albert P. Pisano, dean of the UC San Diego Jacobs School of Engineering.

The San Diego robotics community

Part of Christensen’s work through the Contextual Robotics Institute is to bring these communities together and build momentum for robotics in the region. One way this is happening is through the Institute’s seminar series.

The seminar series is about building the local robotics community, but it’s also about bringing people in from out of the region and giving our robotics students—and the larger robotics community—opportunities to meet these leaders one on one.

“We couldn’t sponsor this seminar series without support from Qualcomm,” said Christensen.

The Contextual Robotics Institute at UC San Diego brings together over 50 researchers from vastly different departments on campus, from anthropology and cognitive science, to computer science, mechanical engineering, music and nanoengineering. Researchers often working in cross-disciplinary teams tackle a wide range of research questions pertaining to robotics, from human-robot interfaces, to radar for self-driving cars, to soft robotics.

The institute's students have formed the Association of Robotics Graduate Students, which organizes weekly seminars. Attendance has topped 100 students in recent weeks, with speakers including the Deputy Director for Engineering and Science at NASA's Jet Propulsion Laboratory, Jordan Evans, and a number of UC San Diego researchers.

The institute aims to be a hub that connects researchers to San Diego's various industry clusters, including aerospace, defense, biotech and wireless communication, Christensen said. Qualcomm of course is a key component of this` robotics ecosystem.

Research and biography

Christensen is a leader in the setting of national policy for the field of robotics and has testified before Congress on the subject. He is the head of a nationwide effort to draft a robotics roadmap for the future and explore the field's potential to transform U.S. society via new markets and industries; to create new jobs; and to address issues of national importance.

Christensen's own research covers computer vision, artificial intelligence and robotics, and his primary emphasis has been on a systems-oriented approach to machine perception, robotics and design of intelligent machines. He has worked with a number of industry partners, including Boeing, KUKA, iRobot, BMW and Apple.

"We are trying to solve real problems with real solutions," he said.

Christensen has published more than 300 contributions in the fields of robotics, vision and artificial intelligence. He and his team seek solutions that are theoretically sound, with well-defined implementations that can be evaluated in realistic situations.

He has worked on a wide range of projects, from helping Boeing increase its production rates for manufacturing to iRobot's defense-focused robots. He was part of a team that developed the world's first autonomous vacuum cleaner, called the Trilobite, in Sweden in the mid-1990s to early 2000s.

In addition to the 300+ journal articles and conference papers, Christensen has published more than 30 book chapters and at least 15 books (as editor or co-editor). He also serves on six editorial boards of leading publications in robotics and pattern recognition, and is the editor in chief of Trends and Foundations in Robotics. In 2013 Christensen was elected a fellow of the American Association for the Advancement of Science (AAAS), and later a Fellow of the Institute of Electrical and Electronic Engineers (IEEE) in 2015.

Christensen was initially trained in mechanical engineering and worked subsequently with MAN/BW Diesel. He earned a master's and Ph.D. in electrical engineering from Aalborg University in Denmark, in 1987 and 1990, respectively.

For more information about giving to the UC San Diego Jacobs School of Engineering, please visit the [giving website](#).

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