

James Kuffner



Dr. James Kuffner is a member of the board of directors, an operating officer, chief digital officer, and in charge of Advanced R&D and Engineering Company of Toyota Motor Corporation (TMC).

Dr. Kuffner received a Ph.D. from the Stanford University Dept. of Computer Science Robotics Laboratory in 2000, and was a Japan Society for the Promotion of Science (JSPS) Postdoctoral Research Fellow at the University of Tokyo working on software and planning algorithms for humanoid robots. He joined the faculty at Carnegie Mellon University's Robotics Institute in 2002.

Dr. Kuffner is perhaps best known as co-inventor of the Rapidly-exploring Random Tree (RRT) algorithm, which has become a key standard benchmark for robot motion planning. He has published over 125 technical papers, holds more than 50 patents, and received the Okawa Foundation Award for Young Researchers in 2007.

Dr. Kuffner was a Research Scientist and Engineering Director at Google from 2009 to 2016. Dr. Kuffner was part of the initial engineering team that built Google's self-driving car. In 2010, he introduced the term "Cloud Robotics" to describe how network-connected robots could take advantage of distributed computation and data stored in the cloud. Dr. Kuffner was appointed head of Google's Robotics division in 2014.

Dr. Kuffner joined the Toyota Research Institute (TRI) as CTO in 2016, and became a senior fellow at TMC in 2020.

Dr. Kuffner is also the Chief Executive Officer (CEO) and Representative Director at the Woven Planet Holdings, Inc. and he continues to serve as an adjunct associate professor at the Robotics Institute of Carnegie Mellon University and an executive advisor to the Toyota Research Institute (TRI).

Key non-TMC posts

Director, Joby Aviation, Inc. (August 2021-)