ABSTRACT

Robotics is coming of age. The availability of affordable electronics components, powerful embedded microprocessors, ubiquitous internet access and WiFi in the household has enabled a new generation of connected consumer robots. In this talk I will walk through my experiences working in robotics at a small startup and at the market leader. I will describe the difficulties of developing consumer robotics products, the technological challenges, and the ingenious solutions implemented in actual products. I will present the potential and the corresponding challenges of introducing consumer robots capable of developing spatial context by exploring the physical space of the home, and I will elaborate on the impact of AI in the future of robotics applications. Moreover, I will depict our vision of the Smart Home, an AI-powered living space that maintains itself and that "magically" does the right thing in anticipation of the occupant needs. This home will be built on an ecosystem of connected and coordinated robots, sensors, and devices that provide the occupants with a high quality of life by seamlessly responding to their daily needs – from comfort to convenience to security to efficiency.

BIOGRAPHY

Mario E. Munich is Senior Vice-President of Research and Development at iRobot Corp. where he manages the research and technology development efforts with special focus on robot navigation, computer vision, and artificial intelligence. He previously worked as the CTO of Evolution Robotics where he developed object recognition, and navigation and mapping algorithms for consumer robotics. He received the degree of Electronic Engineer (with honors) from the National University of Rosario, Argentina and the M.S. and the Ph.D. degrees in Electrical Engineering from the California Institute of Technology, Pasadena. His PhD work focused in developing novel Human-Machine Interfaces using video technology and computer vision techniques. His research interests include computer vision, machine learning, artificial intelligence, sensors for robots, autonomous navigation, and human-robotic interaction.