

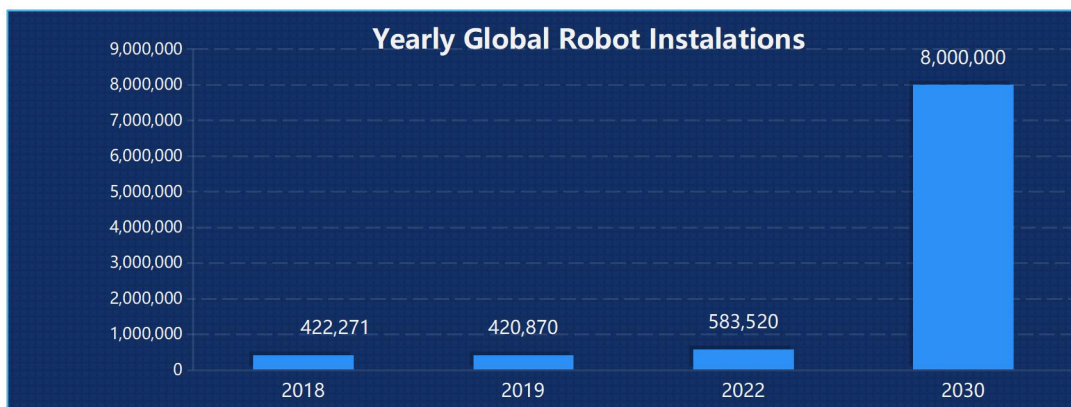
My Dream STEM Career

The STEM career that appeals to me most is to become a robotics engineer. A robotics engineer is an expert who develops, designs, builds, and programs robots that can replicate human actions. A similar job of robotics engineer is robotics technicians. The difference between robotics engineers and robotics technicians is that robotics technicians mostly are in charge of maintain and repair robots or robotic devices that have been installed in use. Moreover, robotics engineer is a higher level job so a robotics engineer's salary is higher than a robotics technician's salary.



Why does this career appeals to me most? Firstly, I think that as a robotic engineer you can build everything you want. Secondly, I think that robots are very cool. Thirdly, I am very interested in how robots work and how to build robots.

My involvement in VEX IQ competition can help me learn a lot about engineering, machinery, physics, and skills to design and operate robots. If I want to be successful in this career, I need to be very good in Mechanical Engineering, Computer Science, Electrical Engineering, Computer Engineering, and skills to design, install, operate, and maintain robotic systems.



I think that this career will be very popular in the next ten years, because in 2030 there are going to be 8 million robots to be shipped according to a report by ABI Research.ⁱ In addition, according to a new study from Oxford Economics, at that time robots could take over 20 million manufacturing jobs around the world.ⁱⁱ Moreover, there are going to be 800 million workers around the world lose their jobs being replaced by robotic automation by 2030. The total number of jobs related to developing, deploying robotics-related applications and new technologies, i.e., automation-, IT-/AI-, may grow to 20 to 50 million globally by 2030, based on a McKinsey's studyⁱⁱⁱ.

All these information mean that there are going to be more robots in use in the future so more robotics engineers are needed to design, operate, and program these robots. Some people who lose their jobs and want to do robotics related jobs, and they need robotics engineers to train them how to do robotics related jobs. This will create also more job opportunities for robotics engineers.



Marc Raibert, MIT Professor and founder of Boston Dynamics. Courtesy of Steve Crowe.

Marc Raibert, a former MIT Professor, is a well-known robotics engineer who founded Boston Dynamics in 1992. He and his company Boston Dynamics are famed for their development of the quadrupedal robot, BigDog, and acrobatic humanoid robots. BigDog has been first developed for the U.S. Military but it was too loud for combat situations, so it was later discontinued. The company built the work spent on BigDog to develop “Spot” into a new form of “dog” robot that was revealed in 2016. Heavy lift robots, like Atlas, and drones, like Wildcat, are also developed by Boston Dynamics. Marc Raibert inspired me to think about how robots work and how to build robots. His success in robotics attributes to studying hard in engineering and daring to innovate.



Setting Mr. Marc Raibert as a model, if I want to become a robotic engineer, I need to study very hard at school and learn many knowledge about robotics and engineering.

ⁱ Sam Francis (10 December, 2019). “Massive growth in mobile robots expected as 6 million forecast to be shipped in 2030”. www.roboticsandautomationnews.com. Retrieved 20 September, 2020.

ⁱⁱ Chloe Taylor (26 June , 2019). “Robots could take over 20 million jobs by 2030, study claims”. www.cnn.com. Retrieved 20 September, 2020.

ⁱⁱⁱ McKinsey Global Institute (July 2019). Industrial Robotics: Insights into the Sector's Future Growth Dynamics. www.mckinsey.com. Retrieved 20 September, 2020.

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