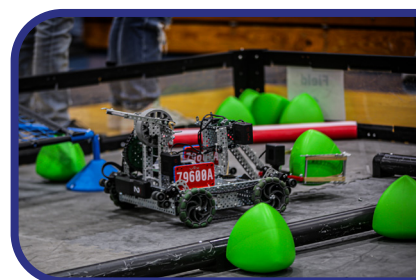
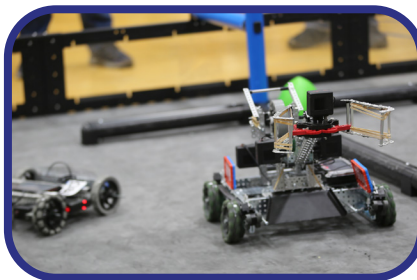


CONCEPT Computational geometry is an important tool for visualizing math, as it allows us to analyze and manipulate geometric data in a variety of ways.

BACKGROUND

Computational geometry is a field of computer science that deals with the algorithmic and mathematical aspects of geometry. It has a wide range of applications including computer graphics, geographic information systems, robotics, and computer-aided design. Computational geometry involves developing and analyzing algorithms and data structures for solving geometric problems and dealing with geometric data, such as geometric primitives, algorithms, data structures, visualization techniques, and applications. The history of computational geometry can be traced back to ancient civilizations, but it emerged as a distinct field of study in the 20th century, driven by the growth of computer technology and the increasing demand for efficient algorithms for solving geometric problems. Today, computational geometry continues to be an active and growing field of research, with ongoing developments in algorithms, data structures, and applications.



REAL WORLD CONNECTIONS

Robotics is another subject matter heavily reliant on computational geometry. Key aspects include collision detection, path planning, grasp planning, object recognition and environmental mapping. One can do a GOOGLE search for videos showing robots at work in Amazon's distribution warehouses. Collision detection and path planning are key to their reliable and efficient operation. Once the robots have made their way to the people doing the item picking, object recognition programs also aid to ensure orders are properly sourced.