# **Special Issue**

# Real Algebraic Geometry and Applications in Robotics and Computer Vision

## Message from the Guest Editor

This Special Issue explores the theoretical field of real algebraic geometry and its interactions with robotics and computer vision applications. Real algebraic geometry provides theoretical frameworks and computational tools that transform the applied fields above through its fundamental structures-semialgebraic sets, real varieties, toric geometry, and related algorithms. These mathematical approaches offer elegant solutions to complex problems, such modeling configuration spaces in robotics and camera calibration in computer vision, providing global guarantees that purely numerical methods cannot. Recent advances have enabled breakthroughs in motion planning, geometric vision problems, and robotic manipulation. This Special Issue welcomes original research contributions that showcase real algebraic geometry developments and innovative applications in robotics and computer vision, as well as theoretical developments inspired by challenges in these domains.

#### **Guest Editor**

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# Message from the Editor-in-Chief

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### Editor-in-Chief

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