

# Asymptotically Optimal Motion Planning

## Overview

# Introduction

Asymptotically optimal motion planning algorithms improve the quality of the solution over time.

## Overview:

- Standard sampling-based motion planning algorithms tend to produce paths that have lots of **extra motion**.
- Asymptotically optimal (AO) motion planning algorithms overcome this problem by **rewiring** the graph as more vertices are added.
- The most widely used AO algorithm is called **RRT\***.

## Aside: Path smoothing

Path smoothing can help, but is limited by the **homotopy class** of the initial solution.