MoveIt Studio
Developer Platform
ROS Industrial Americas Community Meeting

September 21, 2022

Dave Coleman, PhD
CEO of PickNik Robotics
dave@picknik.ai
What is it?

The motion planning platform for ROS.

Robot Arm Planning
Motion and Path Generation

Mobile Base Navigation
Mobile Manipulation

Perception and Vision
Dynamic Scene Understanding

Inverse Kinematics
With Complex Constraints

Realtime Motion Control
Reactive Closed-Loop Motions Generation

Grasping and Manipulation
Picking, Placing, and more

moveit.ros.org
We kept solving the same problems for our 70+ customers to date, and wanted to distill all our best practices into one product.

- Shortcut your development time
- Empower your engineering team
- Easily build and debug advanced applications
- Reduce need for experts
- Enable validating prototypes faster
Tightly integrated Behavior Trees + MoveIt
Develop complex, fault-tolerance robotic applications

Task Level Planning + Motion Planning
Solve multi-step tasks in real time, without waypoint pre-programming

Leverage pre-built library of Behaviors & Tasks
Out of the box many applications can be created in a low code environment

Infinitely extendable by your engineering team
Custom behaviors/plugins can be written, allowing total customization
Remote Monitoring and Error Recovery

- Have a recovery plan in place
- Get robots back online faster
- Enable developers to WFH
- Remotely reset protective stop
- View debug logs online

In partnership with:
• Suited for operator in the loop applications
• Robust to high latency environment
• Leverages supervised autonomy: *mostly automated*

*In partnership with:*
Live Demo!

It usually works :-)

---

PICKNIK ROBOTICS
New Custom Behavior

Behavior plugins are the smallest building block in Movelt Studio that perform a “sense, plan, or act” operation. This screen creates a code template in your ament workspace that you can then fill out in your favorite code editor, for custom code development.

Name
Behavior Name

Code Name
code_name

Behavior Type
SyncActionNode

Description
Description

Cancel
Create
● **Trajectory Introspection**  
Understand when trajectories fail

● **PRM Graph Planning Caching**  
Plan faster and smarter

● **Optimal Trajectory Tuning**  
Benchmark and improve performance
Schedule a call with us!
We’ll send you a live demo
Free trial coming soon

Dave Coleman, PhD
dave@picknik.ai

PickNik Robotics
picknik.ai
Boulder, Colorado
@picknikrobotics