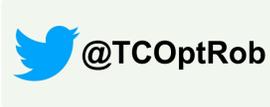


TECHNICAL COMMITTEE FOR

MODEL-BASED OPTIMIZATION FOR ROBOTICS



<https://www.tcoptrob.org/>

2023-2024 TC Seminar Series

Zoom: <https://columbiauniversity.zoom.us/j/91247893326?pwd=L2JWU21aQzc4cU1ZQklEb0QrWGQvdz09>



Yuval Tassa, Google DeepMind

MJPC: Asynchronous UI for real-time behavior synthesis

December 1st, 2023, 10 AM EST

MJPC: Asynchronous UI for real-time behavior synthesis

Model-free, learning-based methods are simple and powerful but inherently slow. Model-based predictive control methods can synthesize behavior in real time, but are considered difficult to understand, implement and use.

In this talk I will present MuJoCo MPC (MJPC), a fully open-source interactive application and software framework for predictive control that lets the user easily author and solve complex robotics tasks. MJPC is a rich GUI application, giving the user real-time visual feedback and allowing them to develop intuitions about the underlying algorithm. Importantly, the interactive simulation can be slowed-down asynchronously—effectively speeding up the controller—leading to a democratization of predictive control tooling.

In closing, I will discuss various ways in which model-based and model-free methods can be combined, exploiting the strengths of both approaches.

The talk will include a live demo of multiple locomotion and manipulation tasks solved from scratch, in real-time, on a laptop.