

# Grasp Planning toolbox in Choreonoid



---

○Tokuo Tsuji (Kyushu Univ.),  
Kensuke Harada, Natsuki Yamanobe,  
Kazuyuki Nagata, Akira Nakamura (AIST),  
Tsutomu Hasegawa(Kyushu Univ.)



# Grasp planning toolbox

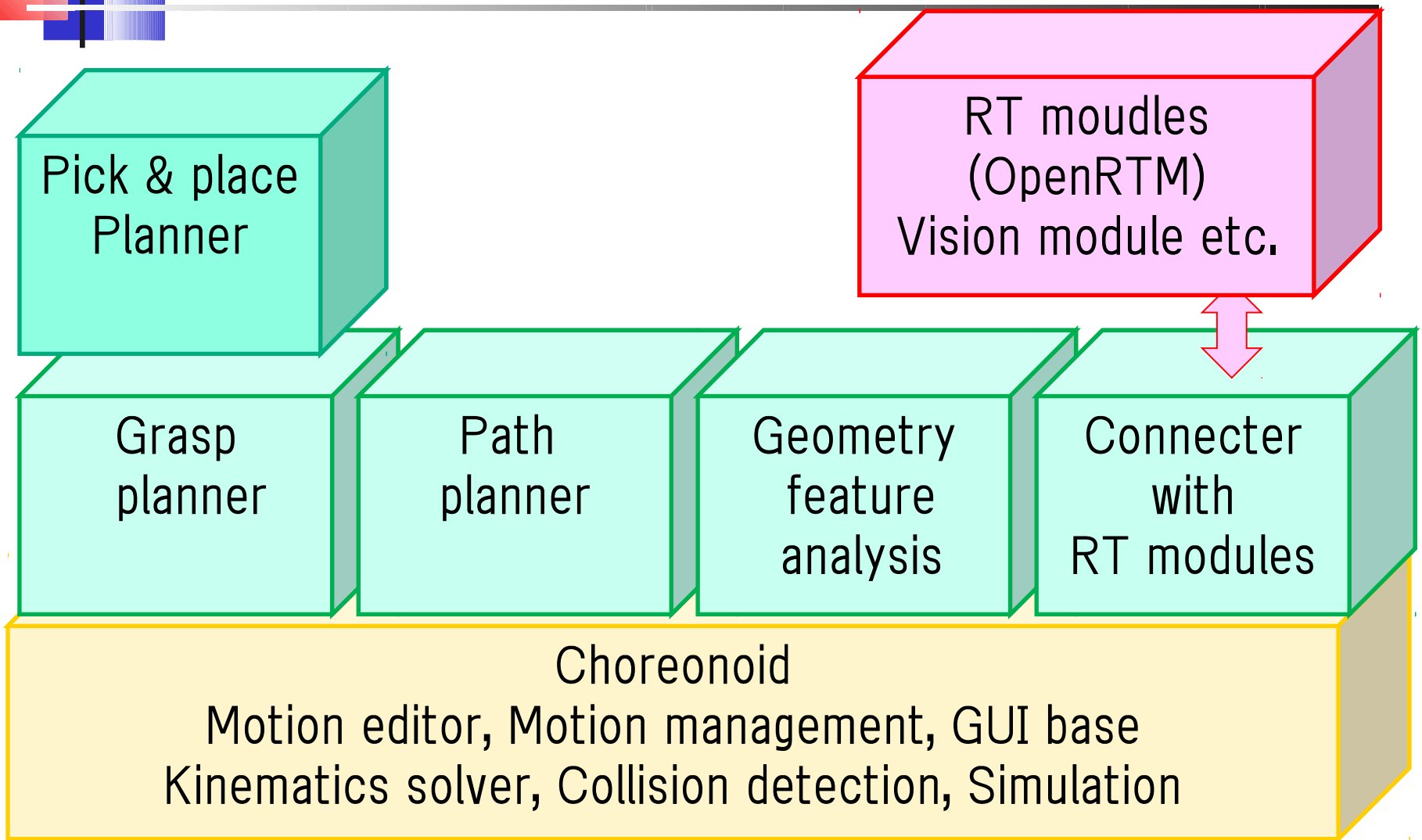
---

- Plugins of Choreonoid  
(choreography for humanoid)
- Features
  - **Fast calculation** for online processing
  - Easy to operate

## Chreonoid Features

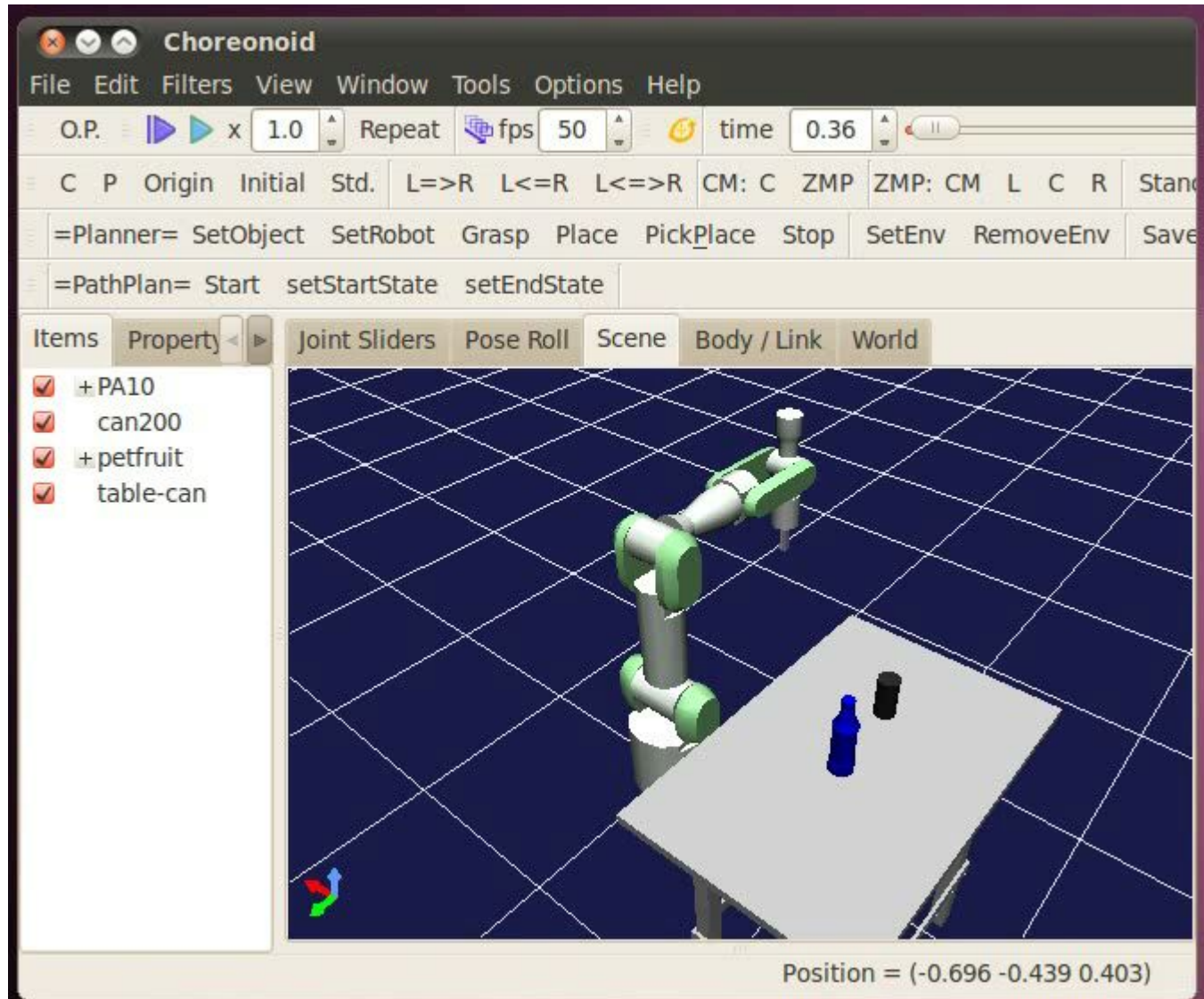
- Easily extendable
- User customizable

# System overview

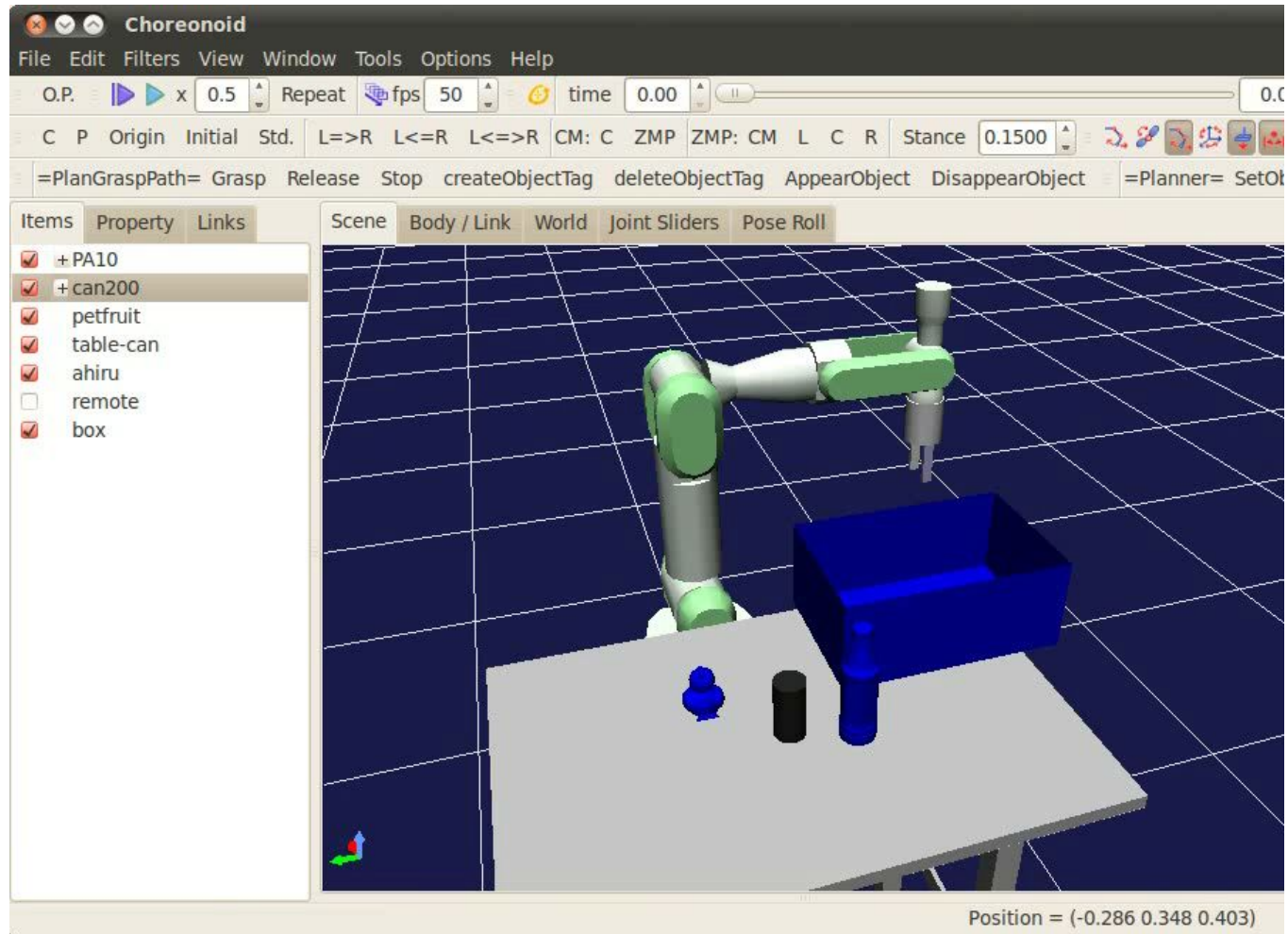


# Grasp planning

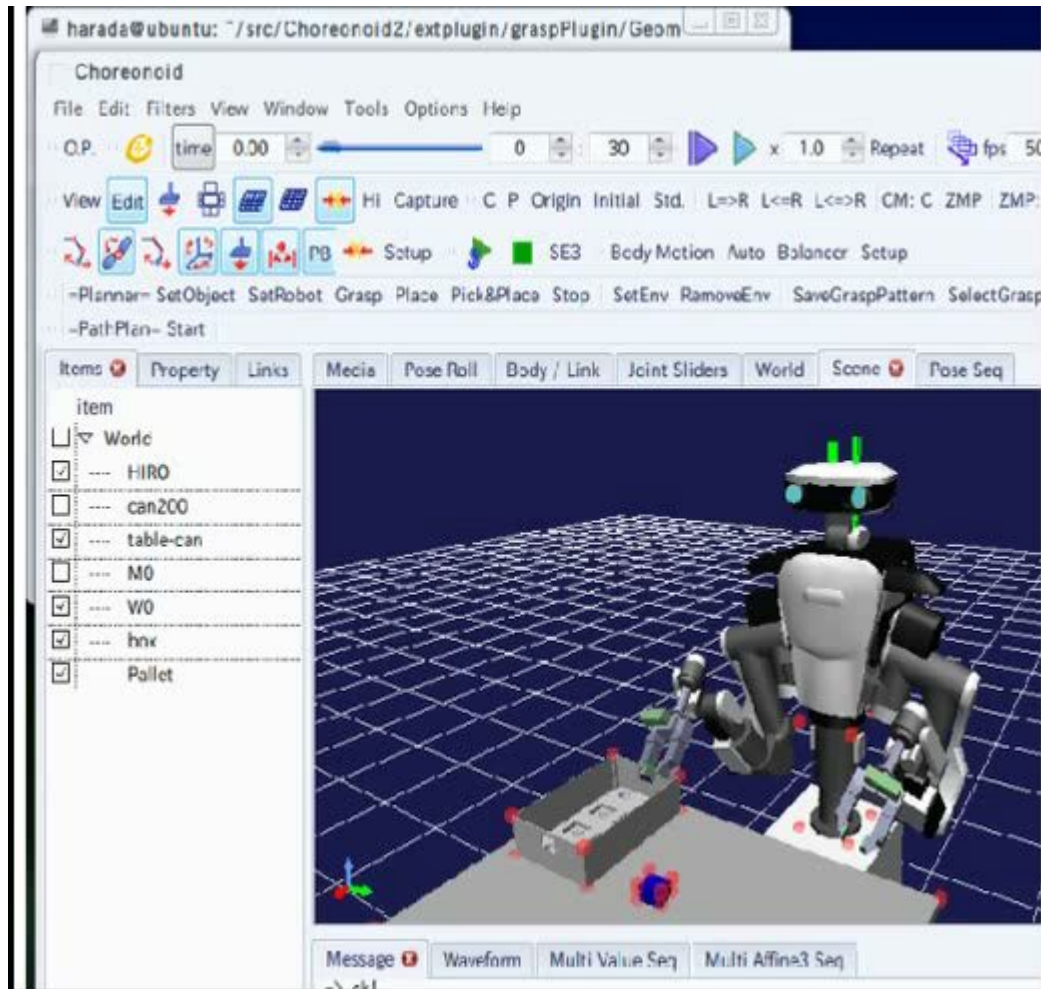
SetObject  
SetRobot  
SetEnv  
Grasp  
Stop

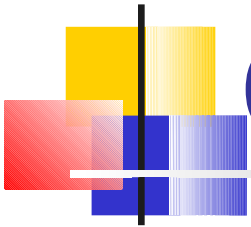


# Path planning



# Pick and place planning





# Geometry analysis

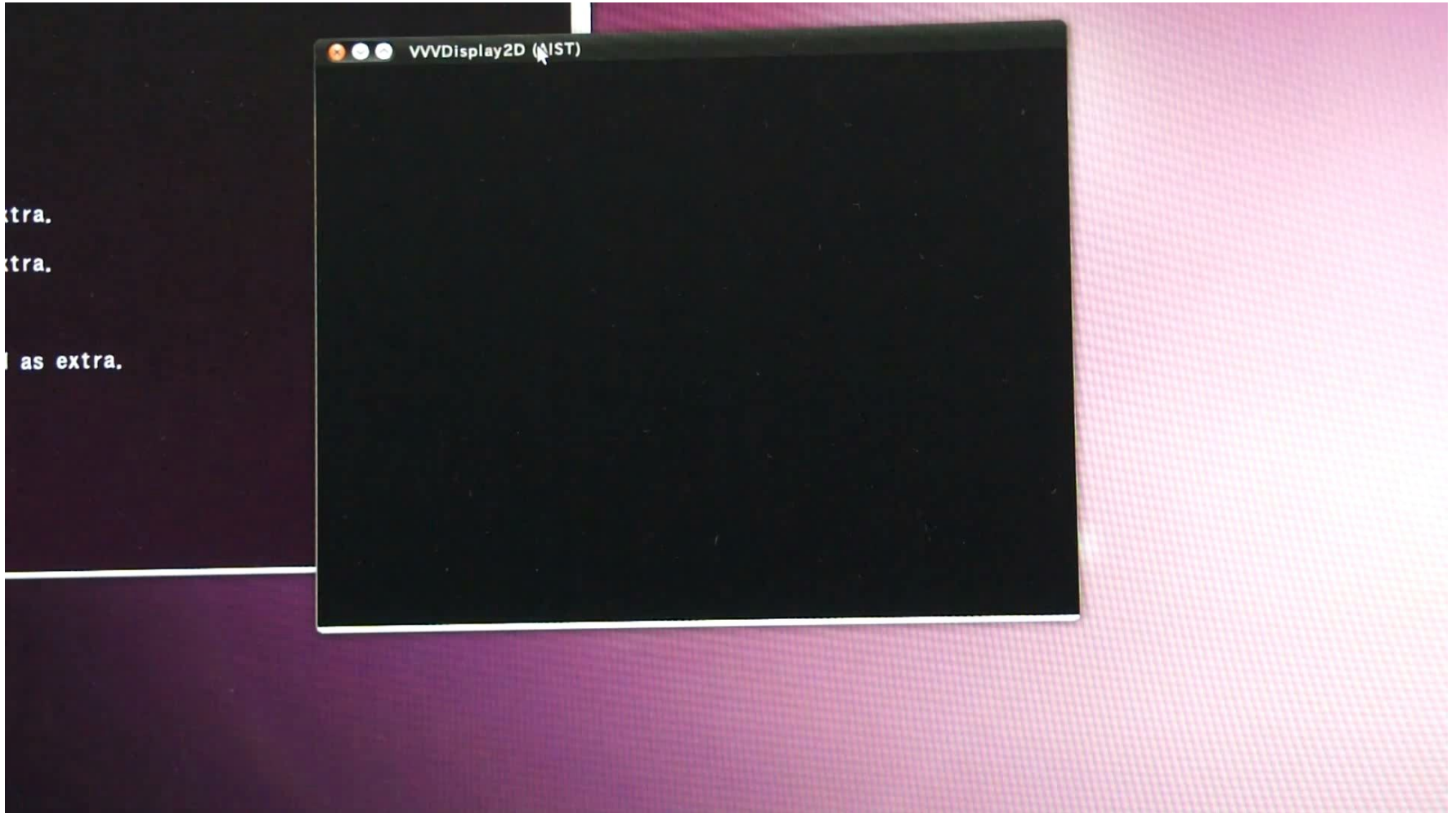
---





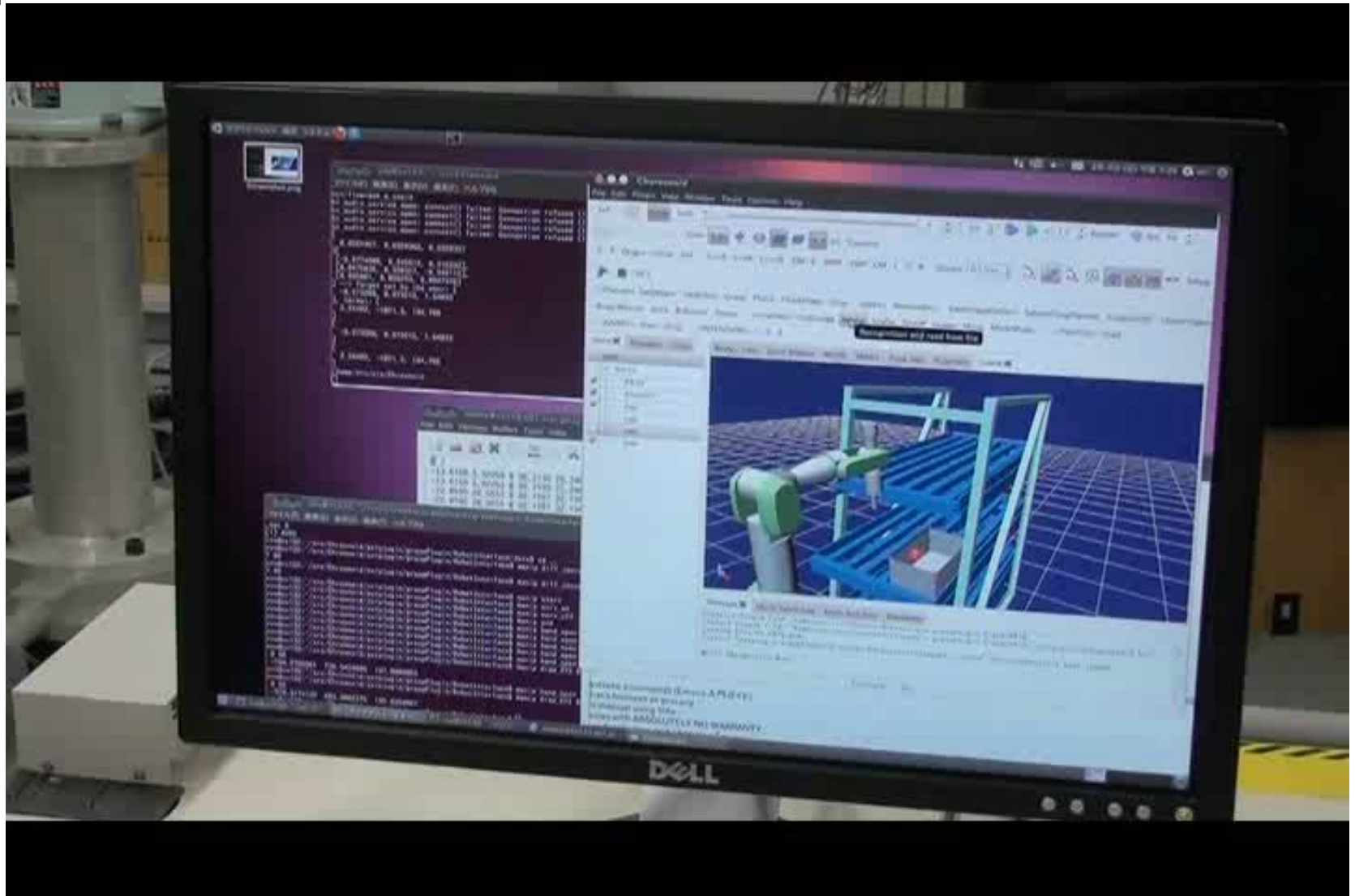
# HIRO operation

---



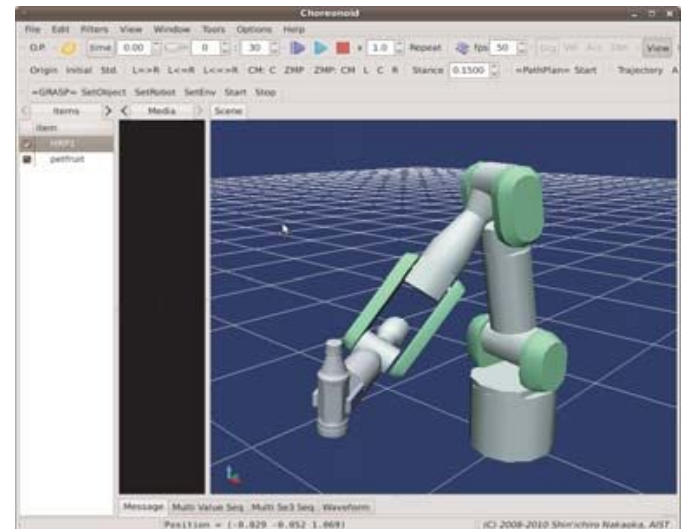
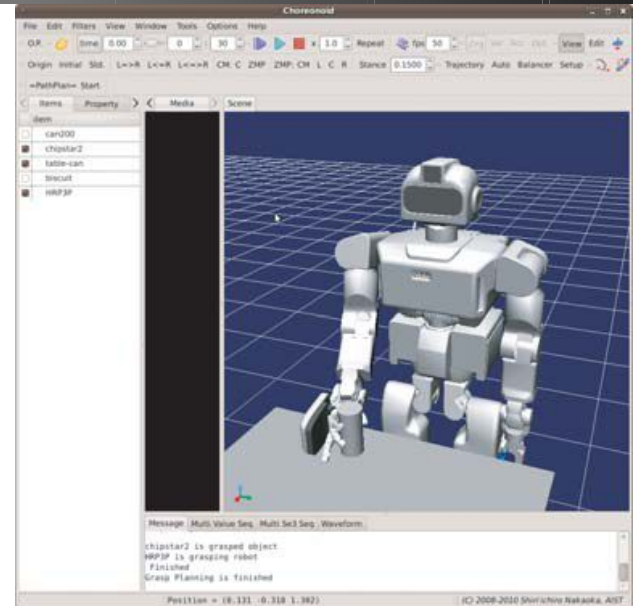


# PA10 operation



# Robot models

- PA-10
- RH-1
- HRP-3P
- SmartPal
- Hiro





# Summary

---

- Grasp planning toolbox
  - Fast calculation
  - Extendable framework
  
- Next steps
  - Grasp planner and simulator for soft finger contact
  - Intuitive GUI
  - Documetation