

Simulated Robotic Manipulation Benchmark

| | |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reference No / Version | RAL-SI-2020-P[19-0842]_3-V1.1 for the latest versions of the benchmark please refer to https://research.csiro.au/robotics/manipulation-benchmark/ |
| Authors | J. Collins, J. M ^c Vicar, D. Wedlock, R. Brown, D. Howard and J. Leitner |
| Institution | CSIRO/QUT |
| Contact information | jack.collins@data61.csiro.au |
| Adopted Protocol | Simulated Robotic Manipulation Protocol – Task3 (RAL-SI-2020-P[19-0842]_3-V1.1) |
| Scoring | <ul style="list-style-type: none"> For scoring, the following must be recorded at 10Hz throughout the duration of the simulation. This is to be exported to a csv with the following information to be recorded in the listed order: <ul style="list-style-type: none"> Position (x,y,z)* Rotation (w,x,y,z)* Joint Torques (J1,J2,J3,J4,J5,J6) Finger Rotations (Finger 1, Finger 2, Finger 3) Force (Fx,Fy,Fz)* Moments (Mx, My, Mz)* Position (x,y,z) † Rotation (w,x,y,z) † 20 Repeats of the simulation are required (used to determine if the simulator is deterministic) Use the performance_metric.py script which can be found at https://research.csiro.au/robotics/manipulation-benchmark/ to generate results. Sum errors for each of the following categories for all tasks in a subgroup: Euclidean distance, rotation, pose, velocity, acceleration, torque, force, moments. <p><i>*From the 'Measurement Frame' as listed in Figures 1 and 2 in the protocol (also referred to as the 'ft_mount_measurement_joint' in the URDF).</i></p> <p><i>†From the object frame depicted in Figures 1 and 2 in the protocol.</i></p> |
| Details of Setup | <ul style="list-style-type: none"> Detailed information on: <ul style="list-style-type: none"> Simulator/Physics Engine used; Tuned parameters and their values; and Anything else required to reproduce results. |
| Results to Submit | <ul style="list-style-type: none"> CSV files from all 20 repeats as used for scoring. CSV files for all other tasks from subgroup 2 (i.e. Tasks 4-10). |