

ABHIJIT MAKHAL

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github.com/jontromanab

EDUCATION

Idaho State University PhD Measurement and Control Engineering	Pocatello, Idaho Grad: December 2017
Indian Institute of Information Technology Masters Computer Science	Allahabad, India Grad: May 2010
Bengal Institute of Technology & Management BTech Electronics and Communication Engineering	Kolkata, India Grad: May 2007

EXPERIENCE

Human Centered Robotics Lab, University Of Washington <i>Research Scientist (supervisor: Prof. Maya Cakmak, Prof. Siddhartha S. Srinivasa)</i> Present	Seattle, WA June, 2017 —
<ul style="list-style-type: none">• Whole Body Control of Mobile Manipulators (Fetch, PR2)• Motion Planning for large surface cleaning by Arm, torso and Base• Interface for controlling ROS-controlled robot by OpenRave	
Institut de Robtica i Informtica industrial <i>Visiting Research Scientist</i>	Barcelona, Spain April, 2017 — May, 2017
<ul style="list-style-type: none">• Grasp execution of superquadric fitting on WAM arms	
ROS-Industrial (Google Summer of Code) <i>Research Internship</i>	Home May, 2016 — August, 2016
<ul style="list-style-type: none">• Reachability Map generation of any redundant or non-redundant robotic arm• Proposed Various Base placement techniques by Reachability map inversion• Validation of base placement theories on real robot and simulation	
Idaho State University <i>Research Assistant (supervisor: Dr. Alba Perez Gracia)</i>	Pocatello, Idaho August, 2013 — Present
<ul style="list-style-type: none">• Superquadric fitting and pose estimation of unknown objects from point cloud data• Proposed Mirroring techniques to approximate occluded regions from single view point cloud• Proposed novel grasping algorithm for superquadrics• Grasp execution of unknown objects in isolation or cluttered scenerio	

SKILLS

Programming:	C, C++, Python, Matlab, Mathematica
Software Tools:	ROS, PCL, OpenCV, OpenRAVE, MoveIT, OMPL, GraspIT, Tensorflow
Robotic Hardware:	PR2, Fetch, WAM, UR5, Barrett, Robotiq, NAO, Turtlebot, HOAP2, Biloid
Robotic Simulator:	Gazebo, V-Rep, Webot
Operating Systems:	Ubuntu, Windows

PROJECTS

Superquadric Grasping <i>C++, ROS, PCL, MoveIT</i> A package to grasp unknown objects by superquadric fitting	https://github.com/jontromanab/sq-grasp
Reuleaux <i>C++, ROS, IkFast, KDL, MoveIT</i> A package for robot reachability analysis and base placement	http://wiki.ros.org/reuleaux
FetchPy <i>Python, ROS, OpenRave, Gazebo</i> A package to control Fetch Robot from OpenRave	https://github.com/jontromanab/fetchpy