Dhruv Kool Rajamani website Email : dhruvkoolrajamani@gmail.com

Year	Degree, Board	Course, Institute	CPI/%
2015 - 2019	**Graduation, BTech.**	Mechatronics Engineering, Manipal Institute of Technology, KA	$8.83^{/10}$
2012 - 2014	**AISSCE, CBSE Delhi**	Vasant Valley School, Delhi	$95.00^{\%}$

Achievements

- Best Rover team from Asia, 8th out of 82 teams at the URC 2017. (*link*)
- Offered INSIPIRE scholarship by DST, Government of India for top 1% score in AISSCE 2014 – Declined
- Best paper presentation at the iACT-2017 conference.

Experience

- **BioRob** Prof. Auke Jan Ijspeert, Dr.Hamed Razavi, Jonathan Arreguit
  École polytechnique fédérale de Lausanne (EPFL) *January 2018 - Present*
  - **Implementation of Walking Controller COMAN Robot(COmpliant HuMANoid Platform):** Developed OROCOS RTT and ROS packages for simulating experiments on walking and stepping. (*video*)
  - **Development of a Neuromechanical framework to study animal locomotion** [1]**:** Developed a ROS package to simulate modular tetrapoda models with neuromechanical control algorithms.
- **Autonomous Robotics Lab** Dr.Sudipto Mukherjee
  Indian Institute of Technology, Delhi *2017 – 2018*
  - **Development of an Underactuated Flexible Manipulator using Differential Flatness:** Designed a 4-link planar manipulator on MATLAB with a *flat controller* with trajectory tracking. (*video*)
- **Mars Rover Manipal** Dr.Y S Upadhyaya
  Manipal Institute of Technology, KA *2015 - 2017*
  - **Development of a Mars Rover Prototype:** Developed an autonomous Rover capable of traversing harsh Martian like terrain and steep gradients of 1m height.
  - **Robotic Arm Lead:** Developed a 6 DOF Robotic Arm with a 6kg payload and a self adapting gripper attachment for the Rover.

Projects

- Obstacle detection and Path planning for an autonomous robot using computer vision and fuzzy logic.
- Traffic Detection using a Kalman Filter and Feature detection in MATLAB.
- LQR based control of a 3-link Linear Inverted Pendulum on a cart (LIP).

Technical Skills

- **Robotics & Programming:** ROS, OROCOS, GazeboSim, C++, Python, C#, MATLAB, LaTeX, Arduino
- **CAD & CAM:** ANSYS Mechanical Workbench, ADAMS, Soliworks, CATIA V6, AutoCAD, Blender

Publications & Presentations

Rajamani, D. K. , et al. **Design and development of a linear jawed gripper for unstructured environments.** Manipal Journal of Science and Technology 3, no. 1 (June 2018). [link]

Rajamani, D. K., et al. **Design Overview of a Planetary Exploration Rover for Unstructured Terrain.** 3rd International and 18th National Conference on Machines & Mechanisms.

Rajamani, D. K., et al. **Design and Development of a Linear Jawed Gripper for Unstructured Environments.** International Conference on Applied Sciences, Engineering & Technology. (ISBN: 978-93-5279-058-6)

[1] This work is supported by the Human Frontier Science Program (HFSP) for the Robotics-Inspired Biology project.