SIDDHANT GANGAPURWALA

56 Woodstock Road, Oxford OX2 6HS | siddhant@gangapurwala.com | gangapurwala.com

EDUCATION

University of Oxford   *October 2017 - Present*
Doctor of Philosophy in Autonomous Intelligent Machines and Systems
Research: *Trajectory Optimization and Policy Gradients based Unified Framework for Robotic Control*
Supervisors: Dr. Ioannis Havoutis and Prof. Ingmar Posner

University of Mumbai   *July 2012 - June 2016*
Bachelor of Engineering in Electronics

RESEARCH INTERESTS

Reinforcement Learning, Optimal Control, Robotic Control and Locomotion, Generative Models, Analytical Modelling, Imitation Learning, Embedded Systems, Digital Signal Processing, Genetic Algorithms

SELECTED PROJECTS

Guided Constrained Policy Optimization for Quadrupedal Locomotion   *2019*
Dynamic Robot Systems Group, Oxford Robotics Institute — Submitted to RA-L 2020
Report: gangapurwala.com/gcpo.pdf | ***Video***: youtu.be/ZaRCL_qzC5Q | ***Field Test***: gangapurwala.com/exp

Reinforcement Learning based Solution for Heterogeneous Swarm Optimization   *2018*
Robotic Systems Lab, ETH Zürich — Collaboration with Dr. Jemin Hwangbo
Report: gangapurwala.com/hsrl.pdf

Generative Adversarial Imitation Learning for Quadrupedal Footstep Planning   *2018*
Dynamic Robot Systems Group, Oxford Robotics Institute
Report: gangapurwala.com/gail.pdf | ***Demo***: gangapurwala.com/gtest

Development of Electronics and Navigation Framework for an Autonomous Mobile Robot   *2017*
Rucha Yantra, Aurangabad
Summary: Designed low-level control circuit board housing an STM32 micro-controller interfaced with on-board navigation computers. Further developed ROS based navigation and perception frameworks for robot autonomy.

Micro-controller based Low-Powered Semi-Autonomous Quadcopter   *2016*
Electronics Engineering Department, D. J. Sanghvi, University of Mumbai
Report: gangapurwala.com/aq.pdf

POSTERS

Quadrupedal Footstep Planning using Unstructured Expert Demonstrations   *2019*
Poster *— Annual CDT Joint (Oxford, Bristol and Edinburgh) Conference, Edinburgh*

Towards Generating Simulated Walking Motion using Reinforcement Learning   *2019*
Poster *— TAROS 2019, London*

TEACHING

Quadrupedal Locomotion and Navigation   *2019*
Instructor *— Oxford Robotics Institute, University of Oxford*

HONOURS

Memory of Motion Research Studentship   *2019*
Autonomous Intelligent Machines and Systems Funding   *2017*

TECHNICAL SKILLS

Programming Languages	C/C++, Python, MATLAB, Assembly (Instruction Sets for Intel 8051 & 8086)
Libraries	Boost, Eigen, PyTorch, PyTorch C++, Tensorflow, OpenAI Baselines, TOWR
Robotic Simulators	RaiSim, PyBullet, Mujoco, V-REP, Gazebo
Design Software	OrCAD, Proteus, Altium, Fusion 360
Development Boards	STM Discovery Kit, Cypress PSoC 4 BLE, Nvidia Jetson TX2