

SIDDHANT GANGAPURWALA

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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 — Accepted to RA-L 2020

Report: gangapurwala.com/gcpo.pdf | **Video:**youtu.be/iPDmG9knkLs | **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