Astha Gupta

Assistant Researcher, École Polytechnique Fédérale de Lausanne

G astha736 | astha736 | astha736 | in astha736 | alphabeginner | ⚲ Lausanne, Switzerland

TECHNICAL SKILLS

Programming Languages
- Python
- C++
- MATLAB
- Cython

Additional Libraries
- OctoMap
- Point Cloud (PCL)
- OpenCV
- Pymoo
- jMetalPy

Simulation and Frameworks
- Robot Operating System (ROS)
- Simulink
- Pybullet
- Gazebo
- Keras
- Tensorflow
- Docker
- Git

Single-Board Computer and Microcontrollers
- RaspberryPi 3 model A+
- Odroid-XU4
- Arduino Due
- Nvidia Jetson xavier

Technical Writing
- Latex
- Microsoft Office

Operating Systems
- Linux / Ubunutu
- Windows

HONORS & AWARDS

Research Thesis Scholarship'20
- by Università degli studi di Genova

Mobility Scholarship'19
- by Ecole Centrale de Nantes

Charpak AME Scholarship'18
- by Embassy of France in India

Top 10% of Class'16
- at BITS, Pilani

Top 1% in AISSCE'12
- All India Senior School Certificate Examination (AISSCE)

EXPERIENCE

Assistant Researcher, CH
Biorobotics Laboratory, EPFL   Sep 20 - Feb 21

Implemented simulation-to-real and real-to-simulation framework to validate learnt bio-inspired quadruped locomotion strategies on Krock robot and Identify system parameters. Project affiliated with NCCR.
▷ Pybullet, Pybind11, Model Description(SDF, URDF), ROS, Multi-threading, Multi-processing

Master Thesis Intern, CH
Biorobotics Laboratory, EPFL   Mar 20 - Aug 20

Multimodal controller design characterisation for quadruped (Salamanders) locomotion using bio-inspired controllers (Central Pattern Generators) and sensory feedback. ⇗
▷ Pybullet, Multi-Objective Evolutionary Optimisation, Non-linear control, Multi-processing

Robotics Intern, DE
Von Reventlow Robotics, Munich   Jul 19 - Aug 19

Worked on pick-and-place routine following Object detection, Object extraction, Grasp prediction and Action execution for omni-drive robot with anthropomorphic robotic hand.
▷ Deep Learning, Grasping, OctoMap, Jetson Xavier, ROS

Research Engineer, JP
Advanced Telecommunications Research Institute International   Oct 17 - Aug 18

Semantic Context Clustering and Forecasting for person-object interaction via RGB-Depth co-registration using spatio-temporal analysis.
▷ Machine Learning, Deep Learning, ROS, Point Cloud Library (PCL)

Prior Experiences
Member of Technical Staff, VMware, IN   Jul 16 - Sep 17
Research Intern , Inria, Lille - Nord Europe, FR   May 16 - Jul 16
Data Science Intern, iLabs [24]7 Inc., IN   Jul 15 - Dec 15

EDUCATION

M.S. Robotics   94.32/100
Ecole Centrale de Nantes, FR   (M1) Sep 18 - AUG 19
Università degli studi di Genova, IT   (M2) Sep 19 - AUG 20

M.Sc.(Tech.) Information Systems   8.27/10
Birla Institute of Technology and Science, Pilani, IN   Aug 12 - Jul 16

PUBLICATIONS

- Data-Driven, 3-D Classification of Person-Object Relationships and Semantic Context Clustering for Robotics and AI Applications.(RO-MAN 2018) ⇗
- Heuristic Approach for Face Recognition using Artificial Bee Colony Optimization.(ISTA 2016) ⇗

PROJECTS

Task Priority Control for Underwater Intervention   ⇗   Sep 19 - Jan 20
▷ Matlab, Task priority control

Modeling and Analysis of CloPeMa Gripper   ⇗   Sep 19 - Jan 20
▷ Matblab, Simscape Multibody Matlab, Screw Theory

Navigation in Social Environment for NAO   ⇗   Dec 19 - Jan 20
▷ Path Planning, NAOqi SDK

Omni-Directional Mobile Robot for Playing Soccer   ⇗   Dec 19 - Jan 20
▷ Gazebo, ROS: Costmap-2D & Move-Base, Simulated Laser Sensor

Nonholonomic Path Planning using A-star Algorithm ⇗   May 19 - Jun 19
▷ Path planning, A*, control space