Mayank Mittal

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EDUCATION

2021–present   **ETH Zürich**, *Ph.D. in Mechanical Engineering*
Thesis: "Learning robust whole-body manipulation for multi-limbed systems"
Advisor: Prof. Marco Hutter

2018–2021   **ETH Zürich**, *M.Sc. in Robotics, Systems and Control*

2014–2018   **IIT Kanpur**, *B.Tech. in Electrical Engineering*

EXPERIENCE

Professional

July 2021–present   **NVIDIA**, *Zürich*, Switzerland
Research Scientist

Sep 2019–Apr 2020   **NNAISENSE**, *Lugano*, Switzerland
Research Intern
Safe-learning and verification of controllers with Intelligent Automation team.

Academic

Apr 2021–June 2021   **ETH Zürich**, *Zürich*, Switzerland
Research Assistant with Prof. Marco Hutter
Collision-free MPC for whole-body control of legged mobile manipulators.

June 2020–Mar 2021   **Vector Institute**, *Toronto*, Canada
Visiting Student Researcher with Prof. Animesh Garg
Deep RL for in-hand manipulation and articulated object interaction.

Nov 2018–July 2019   **ETH Zürich**, *Zürich*, Switzerland
Research Assistant with Prof. Marco Hutter
Application of multi-agent RL to learn whole body control for arm-on-ANYmal.

May 2017–Aug 2017   **University of Freiburg**, *Freiburg im Breisgau*, Germany
Visiting Student Researcher with Prof. Wolfram Burgard
Deep learning to detect landing sites for aerial vehicles in a hostile environments.

ARTICLES

ICRA 2024   **Symmetry Considerations for Learning Task Symmetric Robot Policies**,
📄 arXiv   <u>Mayank Mittal</u>, Nikita Rudin, Victor Klemm, Arthur Allshire, Marco Hutter

ICRA 2024   **Pedipulate: Enabling Manipulation Skills using a Quadruped Robot's Leg**,
📄 arXiv   Philip Arm, <u>Mayank Mittal</u>, Hendrik Kolvenbach, Marco Hutter

ICRA 2024   **ViPlanner: Visual Semantic Imperative Learning for Local Navigation**,
📄 arXiv   Pascal Roth, Julian Nubert, Fan Yang, <u>Mayank Mittal</u>, Marco Hutter

RA-L 2023   **Orbit: A Unified Simulation Framework for Interactive Robot Learning Environments**,
📄 arXiv   <u>Mayank Mittal</u>, Calvin Yu, Qinxi Yu, Jingzhou Liu, Nikita Rudin, David Hoeller, Jia Lin Yuan, Ritvik Singh, Yunrong Guo, Hammad Mazhar, Ajay Mandlekar, Buck Babich, Gavriel State, Marco Hutter, Animesh Garg

ICRA 2023   **Self-Supervised Learning of Action Affordances as Interaction Modes**,
📄 arXiv   Liquan Wang, Nikita Dvornik, Rafael Dubeau, <u>Mayank Mittal</u>, Animesh Garg

IROS 2022 📄 arXiv	**Transferring Dexterous Manipulation from GPU Simulation to a Remote Real-World TriFinger** , Arthur Allshire, <u>Mayank Mittal</u>, Varun Lodaya, Viktor Makoviychuk, Denys Makoviichuk, Felix Widmaier, Manuel Wüthrich, Stefan Bauer, Ankur Handa, Animesh Garg
IROS 2022 📄 arXiv	**Articulated Object Interaction in Unknown Scenes with Whole-Body Mobile Manipulation**, <u>Mayank Mittal</u>, David Hoeller, Farbod Farshidian, Marco Hutter, Animesh Garg
ICRA 2022 📄 arXiv	**A collision-free mpc for whole-body dynamic locomotion and manipulation**, Jia-Ruei Chiu, Jean-Pierre Sleiman, <u>Mayank Mittal</u>, Farbod Farshidian, Marco Hutter
ICRA 2020 📄 arXiv	**Learning Camera Miscalibration Detection**, Andrei Cramariuc[†], Aleksandar Petrov[†], Rohit Suri, <u>Mayank Mittal</u>, Roland Siegwart, Cesar Cadena
ISRR 2019 📄 arXiv	**Autonomous Vision-Based UAV for Urban Search and Rescue**, <u>Mayank Mittal</u>, Rohit Mohan, Wolfram Burgard, Abhinav Valada
IROS 2018 📄 arXiv	**Vision-based Autonomous Landing in Catastrophe-Struck Environments**, <u>Mayank Mittal</u>[†], Abhinav Valada[†], Wolfram Burgard *Workshop on Vision-based Drones: What's Next?*

Teaching Experience

Feb–Mar '23	**Programming for Robotics - ROS**, *Instructor*, ETH Zurich, 🌐 website
Feb–Mar '22	**Programming for Robotics - ROS**, *Instructor*, ETH Zurich, 🌐 website
Sep–Dec '22	**Robot Dynamics**, *TA*, ETH Zurich, 🌐 website
Jan–Apr '18	**Autonomous Navigation**, *Head TA*, IIT Kanpur, 🌐 website

Honors

2018	**Sri. Binay Kumar Sinha Award**, *IIT Kanpur* Best undergraduate project that has industrial applicability and social relevance.
2018	**SIIC Student Innovation Award**, *IIT Kanpur* Best socially-relevant project of global importance among graduating students.
2018	**Science and Technology Excellence Award**, *IIT Kanpur* Exceptional performance in science and technology activities pursued through student activites.
2016, 2017	**Academic Excellence Award**, *IIT Kanpur* Equivalent to Dean's List.
2017	**WISE Scholarship**, *German Academic Exchange Service (DAAD)* Awarded to 192 students to conduct a research internship in Germany.
2016	**Abhyast Scholarship**, *The Boeing Company, USA & IIT Kanpur* Awarded to 4 undergraduate students to design a robotic system for disaster management.
2012	**Kishore Vaigyanik Protsahan Yogna Fellowship (KVPY)**, *DST, Govt. of India* Awarded to 245 students to encourage a research career in science.
2010	**National Talent Search Scholarship (NTS)**, *NCERT, Govt. of India* Awarded to 1000 students to pursue education in STEM.

Positions of Responsibility

Jan 2016–Mar 2018	**Team Lead**, *AUV Team*, IIT Kanpur Achieved 2nd place at national underwater robotics competition (NIOT-SAVe 2016). Organized outreach events to showcase the work and inculcate interest in underwater robotics.
Mar 2016– Apr 2017	**Coordinator**, *Robotics Club*, IIT Kanpur Coordinated various events, workshops, and competitions for robotics enthusiasts in the university.