

ACADEMIC DETAILS

2020 - 2021	M.Tech, Department of Mechanical Engineering	Indian Institute Of Technology, Kanpur	10/10
2016 - 2020	B.Tech, Department of Mechanical Engineering		8.9/10
2016	Class XII (CBSE)	St. Michael's High School, Patna	95 %
2014	Class X (CBSE)	St. Michael's High School, Patna	10/10

RESEARCH AND PROJECTS**M.Tech Thesis - Optimization-based Dynamic Gait Generation and Control for Quadruped Robots**

Advisors: Prof. Shakti S. Gupta (Dept. of Mechanical Engg.) and Prof. Mangal Kothari (Dept. of Aerospace Engg.) (Mar'20-Aug'21)

- Used **trajectory optimization** to generate gaits for an 18 DoF quadruped robot and tracked them using **inverse dynamics control**
- Reviewed different dynamical models of a quadruped and proceeded with the **single rigid body dynamics** based motion planning
- Developed the MATLAB code for computing the torso and feet **reference trajectories**, and the **ground reaction forces** on feet
- Verified the physical correctness of **walk, trot, pace, bound, and pronk** gaits via visualization of the reference motion in MATLAB
- Implemented a path-tracking framework for walking on flat terrain using pre-computed motion templates of **translation and turning**

B.Tech Project - Design and Analysis of a Fluidized Bed Seeder (FBS) for Application in Particle Image Velocimetry

Faculty Advisor - Prof. Santanu De, Department of Mechanical Engineering (Aug'19-Mar'20)

- Surveyed the relevant literature and different types of pre-existing designs of **fluidized beds** used in various industrial applications
- Designed the working mechanism of the FBS setup for **micron sized seeds** (alumina powder) and to withstand pressure up to 3-5 bar
- Iteratively calculated the functional dimensions for each component and other working parameters, feasible within a fixed budget cap
- Analysed the design by simulating the 2D version of the flow in **ANSYS Fluent** and created the 3D CAD model of the assembly

PROFESSIONAL EXPERIENCE**Full-time Position – Business & Data Analyst (General Market (GM) Division, Managed Services Team)**

Alphonso Labs Pvt. Ltd., Bengaluru, Karnataka (July'21-July'22)

- End-to-end execution of **digital advertising campaigns** with video and/or display creatives on **CTV** and **cross-screen devices**
- Optimized live campaigns' performance on **client-specified KPIs** by fine-tuning multiple parameters on the **demand-side platform**
- Represented **operations team** in the GM pod and collaborated with **account managers** and **salespeople** across different time zones
- Analysed data from various sources using **Python** to identify optimizations and prepared the weekly campaign insights client-reports
- Co-developed a script to find app-id discrepancies in click URLs, automated it on **Rundeck**, integrated it with **Slack** to provide alerts

Summer Internship - Manager Model Area (MMA): Towards achieving Operational Excellence (OE) in a production line

Dr. Reddy's Laboratories under Mr. Inderjeet Singh Arora, Site Lead, OE & CI, FTO – 6&8, Baddi, Himachal Pradesh (May'19-July'19)

- Carried out an in-depth study of the **primary and secondary packaging area** of '**Ketorol Express**' in Oral Solid Dosage division
- Completed the 8 hours (one shift) long '**Day-In-Life-Of (DILO)**' study of an operator for increasing their general work efficiency
- Worked towards increasing the **Overall Equipment Efficiency** from 44% to 60% by mapping a 8-hour long **Type C changeover**
- Chalked out a **workplace transformation** plan for improved resource accessibility using the concepts of **1S (seiri)** and **2S (seiton)**
- Designed an **interactive digital training module** of the **CAM Blister Packing machine** for operators based on the machine manuals

PUBLICATION DETAILS

Amritanshu Manu, Shakti S Gupta, and Mangal Kothari: Path Tracking Strategy for Quadruped Robots Using a Hierarchical Framework, *Proceedings of the Seventh International Conference on Advances in Control and Optimization of Dynamical Systems* (ACODS 2022) at Silchar, February 2022

TEACHING EXPERIENCE**Teaching Assistant for Dynamics (ESO 209), a UG level course under Profs. Ishan Sharma and SS Gupta (Sep'20-Dec'20)**

- Acted as a bridge between the instructor and students ensuring smooth conduction of the weekly online problem discussion hours
- Maintained the logistics of the assigned batch including participation in live discussions, assignments submission and attendance

TECHNICAL SKILLS

Programming	MATLAB, C++, Python	Robotics Simulation	ROS, Gazebo, Pybullet	Platforms	Windows, Linux
Design & Analysis	Fusion 360, SolidWorks, ANSYS-Fluent, Static Structural	Other Software	Latex, MS-Office, Jupyter, Git		

SCHOLASTIC ACHIEVEMENTS

- Secured **All India Rank 1254** in Joint Entrance Examination (JEE) Advanced 2016 amongst 1.5 lakh candidates (2016)
- Received the institute's annual **Academic Excellence Award** twice, for semesters **2016-17/I** and **2017-18/II** (2016-18)
- Received **Tarun Sondhi Memorial Donor Scholarship** for the semester 2019-20/II based on academic performance (2020)

POSITIONS OF RESPONSIBILITY**Student Guide, Counselling Service, Indian Institute Of Technology, Kanpur (Jul'17-Apr'18)**

- Mentored six freshmen personally, easing their transition to the campus life and served as their point of contact in case of any issues
- Senior Executive, Volleyball and Weightlifting, Udghosh'17 (Institute's Annual Sports Fest) (Oct'17)**
- Spearheaded a team of ten junior executives to schedule and organise matches for 25+ teams from different colleges across four days

EXTRA CURRICULARS

- Integral member of the **institute volleyball team** since 2016 with participation in various state- and college-level tournaments
- Bagged the **gold** medal in Udghosh'17 and **silver** in Udghosh'18,'19, Spardha'17,'18 (IIT BHU) and Sangram'17 (IIT Roorkee)