

# Curriculum Vitae



**SHINDE AKSHAYRAJ BALASAHEB**

Contact Address:

Near K. G. School, A-47, Room No.4, JNPT Township,  
Taluka-Uran, District-Raigad, Maharashtra, INDIA.  
Pin-400707

Email: [akshayraj.shinde.9@gmail.com](mailto:akshayraj.shinde.9@gmail.com)

Mobile: +91-8433798251

## PROFESSIONAL POSITIONS

- Project Associate      October, 2020 – till date (3 years)  
Human Centered Robotics Laboratory, Indian Institute of Technology,  
Gandhinagar-382355, Gujarat, India.  
**Project-1 title:** Implementation and control of cable actuation for gait assistance  
**Project-2 title:** Cable driven hybrid actuation for load carriage
- Technical Compiler    March, 2020 – October, 2020 (8 months)  
Department of System Documentation and Training, Larsen & Toubro  
(Defence), Mumbai, India.  
**Project-1 title:** Interactive electronic technical manual for pontoon control system  
**Project-2 title:** Technical manual for complete overhaul of K9 155mm self-propelled howitzer's (SPH) turret and starter assembly
- Project Associate      April, 2018 – March, 2019 (1 year)  
TTK Center for Rehabilitation Research and Device Development (R2D2),  
Machine Design Section, Department of Mechanical Engineering, Indian  
Institute of Technology, Madras, India.  
**Project title:** Development, deployment and commercialization of complete mobility solution for people suffering from loco-motor disability, both indoor and outdoor

## PATENT FILED

- **Shinde A.B.**, Bhardwaj S., Singh R., Vashista V., "Passive Back Assist Exosuit (BASE) emulator for manual material handling applications," [Patent filed at Indian Patent Office]
- **Shinde A.B.**, Singh Y., Vashista V., "Assistive Device for Ankle Progression in all Terrain (ADAPT)," [Patent filed at Indian Patent Office]

## RESEARCH PUBLICATIONS

- Bhardwaj S., **Shinde A. B.**, Singh R., Vashista V., "Passive Exosuit Emulator for Material Handling Applications," *IEEE Robotics and Automation Letters* (DOI: [10.1109/LRA.2022.3183748](https://doi.org/10.1109/LRA.2022.3183748))
- Bhardwaj S., **Shinde A. B.**, Singh R., Vashista V., "Manipulating device-to-body forces in passive exosuit: An experimental investigation on the effect of moment arm orientation using passive BASE emulator" [Accepted at [Wearable Technologies journal](#)].

- **Shinde A.B.**, Gandhi N., Bhardwaj S., Vashista V., “Torque amplification using a cable driven multi-pulley mechanism for ankle foot orthosis” [Accepted at [Advances in Robotics 2023 conference](#)].
- Singh Y., **Shinde A. B.**, Vashista V., “Biomechanical-driven multimodal Gait classification for real time application in Exoskeleton Intervention ” [Manuscript under preparation]

## GRANT SECURED

- Prajapati P., **Shinde A. B.**, Vashista V., received Department of Science and Technology (DST) NIDHI's PPromoting and Accelerating Young and ASpiring technology entrepreneurs (PRAYAS) grant in January 2023.

## EDUCATION

- Bachelor of Engineering** : **Mechanical Engineering**  
 August, 2013 – June, 2017  
 Vishwaniketan's Institute of Management Entrepreneurship and Engineering Technology, Raigad- 410202, Maharashtra, India  
 (affiliated to Mumbai University, Maharashtra, India)  
**Project title:** Design and fabrication of ‘Treadmill Cycle’  
 CGPA: 7.98/10.00
- Higher Secondary School Certificate (HSC)** : **Science**  
 June, 2011 – March, 2013  
 St Mary's Convent High School and Junior College,  
 Navi Mumbai-400702, Maharashtra, India  
 Marks: 71.33%
- Secondary School Certificate: (SSC)** : **General subjects**  
 March, 2011  
 Jawaharlal Nehru Port Vidyalaya, Sheva,  
 Uran-400707, Maharashtra, India  
 Marks: 88.83% (First class with distinction)

## OTHER ACADEMIC ACTIVITIES

1. Completed National Programme on Technology Enhanced Learning (NPTEL) certification course on ‘Introduction to Robotics’ by Prof. D. K. Pratihari with a consolidated score of 97% and secured first rank all over India (July – September, 2019).
2. Worked on a project entitled ‘Design and fabrication of a Treadmill Cycle’ under the guidance of Prof. V. S. Kamble as a part of final year Bachelor's degree project, that converted stationary treadmill into locomotive (July, 2016 – May, 2017).
3. Secured first position in ViSion-2016, a value addition program project exhibition in ANSYS category for ‘Static and transient analysis of an all-terrain vehicle roll cage’ in April, 2016.
4. Participated in ‘Autodesk Fusion 360 Design now event’ in October, 2016.
5. Successfully completed a training program on ‘Advanced finite element analysis using ANSYS’ and effectively completed a group project titled ‘Static and transient analysis of an all-terrain vehicle roll cage’ in January, 2016.

6. Certification of successful completion of a training program on 'Finite element analysis using ANSYS' in July, 2015.
7. Successfully completed a training program on 'Advanced computer aided drawing using CATIA' and effectively completed a group project entitled 'Design of brakes subsystem of Maruti Zen car' in January, 2015.
8. Certification of successfully completing a training program on 'Computer aided drawing using CATIA' and effectively completed a group project entitled 'Design of a fixture assembly and knuckle joint' in July, 2014.

### **EXTRA-CURRICULAR ACHIVEMENTS**

1. Won Gold and Bronze medals in second edition of ATHE-League held at IIT Gandhinagar in 100, 200 and 4 x 100 meters relay events and was awarded as 'Emerging Athlete'.
2. Was part of winning team of 12<sup>th</sup> edition of League of Football Players (LFP) held at IIT Gandhinagar and was also awarded with 'Player of the Tournament'.
3. Participated in football, table-tennis, cricket, basketball, and kho-kho events of inter-college meet event named 'ViSport' and secured winners / runner-up positions in consecutive years (2013-2017) during Bachelor's degree programme.
4. Founding member of 'Mechanical Engineering Student Association' (MESA) of Bachelor's degree institution, which plays an active role in institute events, spearhead various technical competitions and also organize co-curricular and extra-curricular activities.
5. Represented undergraduate institution (2014-2017), College (2011-2103), High-School (2009-2011) and Elementary-School (2006-2008) Football teams at intra-University, District and Division levels in Under-14, Under-17, Under-19 and open-age category.
6. Second prize in football at district (rural) level competition in collaboration with Sports Authority of India (2010-2011).
7. Awarded first prize in all India on the spot camel colour contest (2006-2007).
8. Consolation prize for group play at 'Inter School Lalit Kala Mahotsav 2007-08'.
9. Second prize in 800 meters Taluka level running competition (Under-14 age category), 2008.

### **VOLUNTEER EXPERIENCE**

- An active member of Special Volunteer Force (SVF) created to help the IITGN community. This task force is responsible to help out the residents of housing blocks who are either COVID positive or under quarantine.

### **TECHNICAL SKILLS**

- Programming languages: C
- System Engineering Software: LabView
- Machine and mechanism design: SOLIDWORKS, Autodesk Inventor 2018, CATIA V5, ANSYS, Autodesk Fusion 360
- Prototyping: 3D-printing, CNC and VMC machining, Milling, Lathe machining, Drilling, Welding, and Soldering

## REFERENCES

**Prof. Vineet Vashista**

Assistant Professor,  
Human Centered Robotics Laboratory, Faculty of  
Mechanical Engineering, Indian Institute of  
Technology, Gandhinagar-382355, India.

**Email:** [vineet.vashita@iitgn.ac.in](mailto:vineet.vashita@iitgn.ac.in)

**Dr. Siddharth Bharadwaj**

Post Doctoral Fellow

Human Centered Robotics Laboratory, Faculty  
of Mechanical Engineering, Indian Institute of  
Technology, Gandhinagar-382355, India.

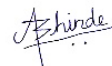
**Email:** [siddharth.b@iitgn.ac.in](mailto:siddharth.b@iitgn.ac.in)

## DECLARATION

I hereby declare that the above information is true to the best of my knowledge.

**Place :** Gandhinagar, India.

**Date :**



(Shinde Akshayraj Balasaheb)