

NAM:TECH
Institute of Manufacturing Innovation

Fellowship Programme in Intelligent Robotics and AI Systems

3-Month Hybrid Fellowship
for B.TECH FINAL YEAR STUDENTS





About NAMTECH

NAMTECH (New Age Makers' Institute of Technology), an educational initiative by ArcelorMittal Nippon Steel India, is the first Manufacturing, Engineering and Technology (MET) Institution. Aligned with the nation's 'Make in India' and 'Viksit Bharat 2047' goals, NAMTECH aims to accelerate this transformation by equipping ambitious minds with advanced, experiential engineering programmes & promoting responsible technology to build a sustainable, innovative future.

NAMTECH is committed to meet the demand for Industry 4.0 & Industry 5.0 ready professionals by developing talent that is both technically competent, and conscious towards the environmental & social impact of innovation.

We are pleased to inform, the Ministry of Education, on the advice of UGC, hereby issues Letter of Intent (LOI) to NAMTECH for fulfilment of the required conditions within a specific period of for conferment of Institution deemed to be university status .

About School of Robotics

School of Robotics (SoR) has carved its niche in the interdisciplinary learning and practice. With the paradigm shift in engineering education from focusing on core disciplines to integrating interdisciplinary applications, SoR provides a platform to educate and empower robotics enthusiasts across the country and beyond. Building upon the strengths of experiential learning in Industrial robotics, SoR is expanding into diversified fields such as collaborative systems, locomotion, aerial robotics, and legged robotics. To create a collaborative platform for translational research, innovative and demanding areas such as Human-Robot interface and soft robotics are being initiated.

NAMTECH Fellowship Programme in Intelligent Robotics & AI Systems

The NAMTECH Fellowship Programme in Intelligent Robotics and AI Systems is a structured, three-phase academic and project-oriented programme designed to provide strong foundations and applied exposure in robotics, artificial intelligence, and autonomous systems.

Online Component:

Conceptual learning and expert-led sessions delivered through virtual platforms focusing on simulation and coding.

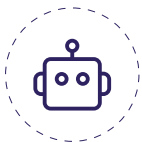
On-Campus Component:

Hands-on project implementation, experimentation, and system integration.

Why This Internship is Different?

Not Just Another Internship.

A Launchpad into Intelligent Robotics Careers.



Strong Foundation in AI for Robotics



Work with Industrial Robots & Cobots



Mentorship by Robotics Experts



Python-based Simulations (SLAM, Kalman Filter, PID, Particle Filtering)



Real Project Implementation on Campus



Exposure to Industry Case Studies



Programme Structure – Three Phases

Phase 1: March 2026 (Online)

AI/ML for Robotics – Fundamentals focusing on simulations and coding. Activities include registration, webinars, and structured assignments.



Topic 1

LECTURE – Foundations:
Scope of AI/ML in Robotics;
Intelligent & Rational Agents.

ASSESSMENT

Make a conceptual design of Wheeled Mobile robot and sensors to perform collision avoidance write a Py script showing logic.



Topic 2

LECTURE – Agent Types:
Simple reflex, Model-based,
Goal-based, and Utility agents.

ASSESSMENT

Write a Python Script to simulate a mobile robot moving in grid space avoiding collision with timid reaction.



Topic 3

LECTURE– Symbolic AI:
Problem-solving agents;
State-space representation;
Search strategies.

ASSESSMENT

Write a Python Script to simulate a mobile robot moving in grid space avoiding collision with timid reaction till reaches its goal using any heuristic path planning algorithm.



Topic 4

LECTURE– Logic & Uncertainty:
First-Order Logic; Probability
theory; Bayes' theorem.

ASSESSMENT

Write a Python Script to simulate a mobile robot moving in grid space avoiding collision with timid reaction till reaches its goal using any heuristic path planning algorithm assigning random errors to the earlier code



Topic 5

LECTURE– Planning & Localization:
Classical/Heuristic planning;
Dead reckoning principles.

ASSESSMENT

Write a python script to perform localisation based on dead-reckoning principle



Topic 6

LECTURE– Probabilistic Estimation:
Bayesian framework; Kalman
Filter (KF) formulation.

ASSESSMENT

Implement Kalman filtering for noise sensor data (given or random). Generate random sequence numbers, assign error % and then implement Kalman filtering in python script.



Topic 7

LECTURE–Advanced Filtering:
Alpha–Beta–Gamma filtering;
Linear system assumptions.

ASSESSMENT

Implement mapping for random set of data generated in py for mapping and mapping with Alpa-Beta-Gamma filtering.



Topic 8

LECTURE–Control Systems:
Reactive vs. Predictive control;
PID tuning and stability.

ASSESSMENT

Write a python script to implement PID control for randomly generated error in localisation and generate PWM control signal.



Topic 9

LECTURE–Monte Carlo Methods:
Particle filtering; Importance sampling and resampling.

ASSESSMENT

Implement particle filtering based localisation in python simulation.



Topic 10

LECTURE–SLAM:
Simultaneous Localization and Mapping; Mapping coupling challenges.

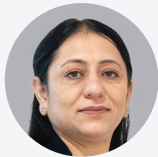
ASSESSMENT

Implement SLAM in python simulation.

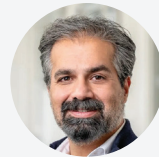
Phase 2: April 2026 (Online)

Expert seminars, industry talks, applied case studies, project floating, and guided group discussions for project formulation.

Week 1 Activity: SEMINAR



Keynote Speaker
Dr. Ekta Singla
Associate Director,
School of Robotics, NAMTECH
PhD - IIT Kanpur



Keynote Speaker
Prof. Dr. Mohammad Ali Nasser
Professorship,
Medical Autonomy and Precision Surgery (MAPS)
School, TUM School of Medicine and Health

Week 2 Activity: SEMINAR



Experts
Dr. Ashish Kumar Shukla
Associate Professor,
School of Robotics, NAMTECH
PhD - IIT Indore



Experts
Dr. Anubhav Mishra
Assistant Professor,
School of Robotics, NAMTECH
PhD - IIT Kanpur



Experts
Dr. George Yuvaraj
Assistant Professor,
School of Robotics, NAMTECH
PhD - BITS Pilani - Hyderabad



Experts
Mr. Mukesh Kumar
Senior Lecturer,
School of Robotics, NAMTECH
PhD - IIT Patna (Ongoing)

Week 3 Activity: PROJECT FLOATING

Faculty Mentor:
NAMTECH - School of Robotics

Week 4 Activity: GROUP DISCUSSION

Faculty Mentor:
NAMTECH - School of Robotics

Phase 3: May 2026 (On-Campus)

Full-time on-campus, project-based learning involving design, development, testing, and demonstration under faculty mentorship.



AI-Based Pick-and-Place
Robotic Arm



Seismic Survey Robot for
Underground Mining Applications



Mine Safety Inspection Robot
for Hazardous Environments



Computer Vision-Based Structural
Inspection Robot



Mini Robot for ENT and Oral
Inspection



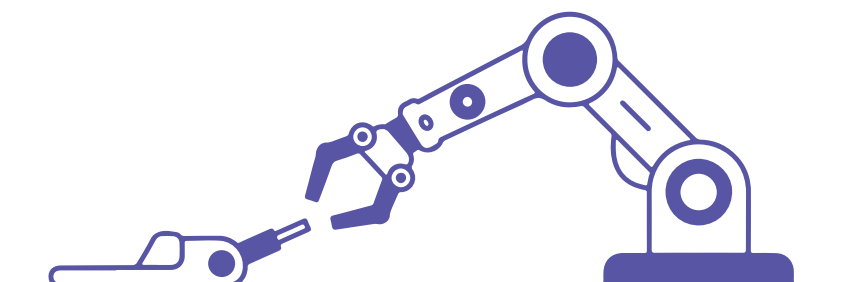
Physiotherapeutic Robot for
Simulating Paralyzed Muscles

NAMTECH Fellowship Programme Benefits

- Opportunity to work on Industry-Related Projects.
- Funding Support per project for approved project-related expenses.
 - Free access to the Phase-I online AI/ML for Robotics course.
 - Webinars, seminars, and industry talks conducted at the expense of NAMTECH.
 - Exposure to real-world industry and research case studies.
 - Academic mentoring and technical guidance throughout the programme.
 - On-campus accommodation subject to availability (not mandatory) at the payment of actual fees.
 - Fellowship Certificate on successful completion.
 - Letter of Recommendation.
 - Access to NAMTECH's Industry grade world Class Robotics Lab established by ABB, Fanuc, and Addverb.

Eligibility

Currently pursuing B.Tech 4th year (8th semester) enrolled in any recognized institute/university with a minimum of 6.0 CGPA / 60% and no active backlogs



Application Process



Scan here for registration

Click here for registration

<https://forms.gle/WSxaN8C4eSrFnnny6>



Step 1

Application to be submitted online via Microsoft Forms.



Step 2

Submission of scanned Student ID.



Step 3

Upload latest semester marksheet/result.



Step 4

Statement of Interest (maximum 200 words).



Step 5

Details of projects, papers, conferences, or research work completed till date. With your latest biodata.

Shortlisting Criteria

Candidates will be shortlisted based on the following weightage:

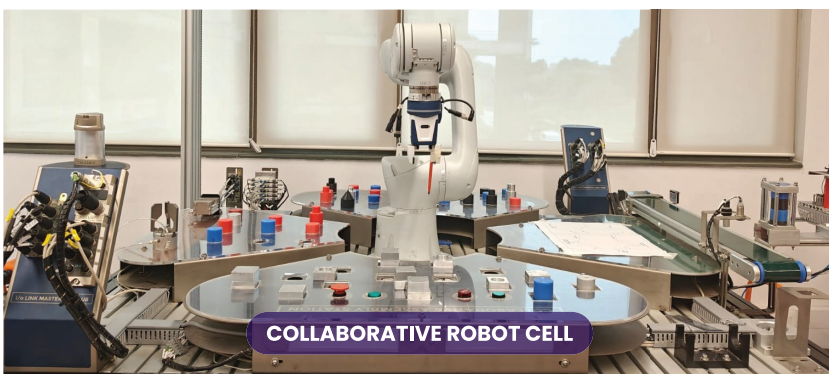
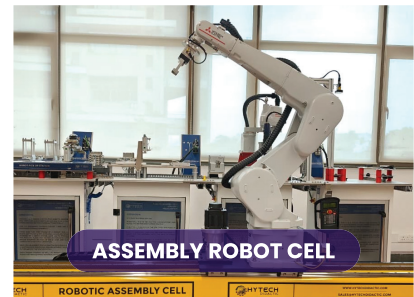
50% Academic Performance

20% Statement of Interest

30% Projects/ Papers/ Conferences/ Research Work

Industry-Grade Equipment, On-Campus

Imparting Consciousness, Building Humane Capital



NAMTECH Campus

NAMTECH's final home is a smart campus that is currently under development on over 150 acres of land in Ahmedabad and will accommodate 5 Schools, 2 centers and 1 center of Excellence.

This new campus of NAMTECH is scheduled to be fully operational by July 2026.

Take the First Step Toward Becoming a Robotics Leader



Address:

Research Park, IIT Gandhinagar, Palaj, Gandhinagar, Gujarat – 382055, India

www.namtech.ac | info@namtech.ac

For more details contact: **Uttam Biswas +91 70653 62436**



Scan here
for registration