

# VENKATESH PATTABIRAMAN

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## EDUCATION

### New York University (NYU)

M.S. in Robotics

Fall 2022 - Summer 2024 (Expected)

Advisor: [Prof. Lerrel Pinto](#)

*Relevant Coursework:* Robot Perception, Computational Neuroscience, Robot Localization & Navigation

### Indian Institute of Technology, Indore (IIT-I)

B.Tech. in Mechanical Engineering

Jul 2018 - May 2022

*Bachelor Thesis*, Advisor: [Prof. I.A. Palani](#)

*Relevant Coursework:* Control & Dynamical Systems, Kinematics & Dynamics of Machines, Finite Element Methods

## SKILLS

### Programming

Python, C/C++, MATLAB-Simulink, ROS, LaTeX

### Libraries & Packages

PyTorch, MuJoCo, DeepMind Control Suite, JAX, Tensorflow

### Mechatronics

SolidWorks, 3D Printing, Arduino & Raspberry Pi, Ansys, COMSOL

## RESEARCH

### Generalizable Robotics and AI Lab | NYU | [GRAIL](#), [CILVR Group](#)

Ongoing

Research Focus: Robotics, Deep Reinforcement Learning, Neuro-inspired Priors

Advisor: [Prof. Lerrel Pinto](#)

- Developing bio-inspired robot locomotion algorithms with deep reinforcement learning and neuro-inspired priors.
- Studying the influence of Central Pattern Generators (CPGs) on modular robot morphologies.

### Automation and Intelligence for Civil Engineering | NYU | [AI4CE Lab](#)

Oct 2022 - Dec 2022

Research Focus: Visual SLAM, Visual Place Recognition

Advisor: [Prof. Chen Feng](#)

- Assisted in [UNav](#) - A vision-based localization system to aid users with blindness & low vision
- Utilized a novel Visual Place Recognition algorithm to estimate user locations and directions based on images, removing the need for sensor infrastructure.

### Indian Institute of Science (IISc) | [Mechanics & Computation Lab](#)

Jun 2022 - Aug 2022

Research Focus: Flexible Robotics, Geometric Mechanics

Advisor: [Prof. Ramsharan Rangarajan](#)

- Developed Elastica's (flexible robot arm) tip control, for maneuverability and accuracy in complex tasks
- Implemented a burn wire release mechanism on Elastica, enhancing its versatility for space applications

### Indian Institute of Technology (IIT) Indore | [Mechatronics & Instrumentation Lab](#)

Jul 2021 - Dec 2021

Research Focus: Soft Robotics, Shape Memory Alloys (SMA), Aerial Robotics

Advisor: [Prof. I.A. Palani](#)

- Designed and developed a highly dexterous 17-DoF SMA-actuated versatile gripper.
- Optimized displacement in a NiTi alloy-Kapton Polyimide thin-film actuator for marine robotic flappers.

## INDUSTRY EXPERIENCE

### Software Intern @ FEV Group, Department: Intelligent Mobility & Software

May 2021 - Aug 2021

- Studied Range Polygon for Autonomous Vehicles and Electric Automobile Quality Control.
- Used MATLAB-Simulink for optimizing driving range via computational path planning with road network data.

### Research Associate Intern @ Simpson & Co., Advanced Engineering

Dec 2020 - Jan 2021

- Improved electric weeder performance through MATLAB simulation, adapting to varying soil conditions.
- Optimized Tiller Torque vs Weeder Efficiency using Taguchi methods, expanded 4.1kWh, 48V battery's range.

## TEACHING

Teaching Assistant | [CSCI-UA 480-072: Introduction to Robot Intelligence](#) | NYU

## SELECTED AWARDS & SCHOLARSHIPS

[JEE Mains & JEE Advanced](#), IIT Entrance Examination, 2018

[KVPY Scholar](#), IISc Entrance Examination, 2017

[NTSE State Scholar](#), 2015

Ranked Among Top 0.4 % in India

Ranked Among Top 0.5% in India

Ranked 3 in State (Karnataka)