

Build the Future. Become a Robotician.

A one-year, project-based journey from circuits to autonomous intelligence. Master the skills to design, build, and program the robots of tomorrow.

AI EXPERT ACADEMY

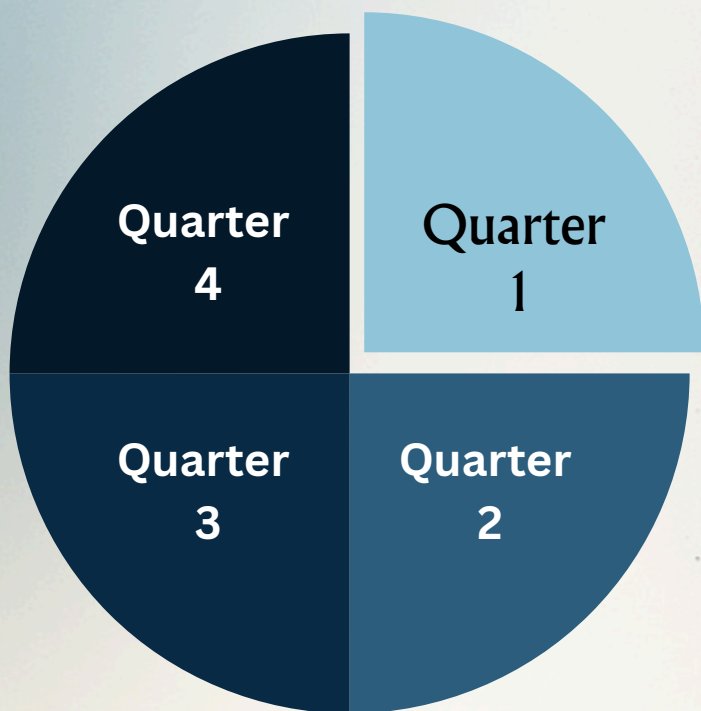
OUR JOURNEY STARTS HERE

This course is designed for the curious, the creators, and the future innovators. Whether you're a student exploring career paths, a hobbyist looking to level up, or a professional seeking a transition into the exciting field of robotics, our hands-on curriculum is your roadmap to success.

WHAT YOU WILL MASTER:

- Electronics & Embedded Systems
- 3D Printing & Fabrication
- The Robot Operating System (ROS)
- Advanced Simulation
- Autonomous Navigation
- Robotic Arm Manipulation
- Computer Vision
- Future-Ready Skills

LEARN BY DOING: A YEAR OF HANDS-ON PROJECTS



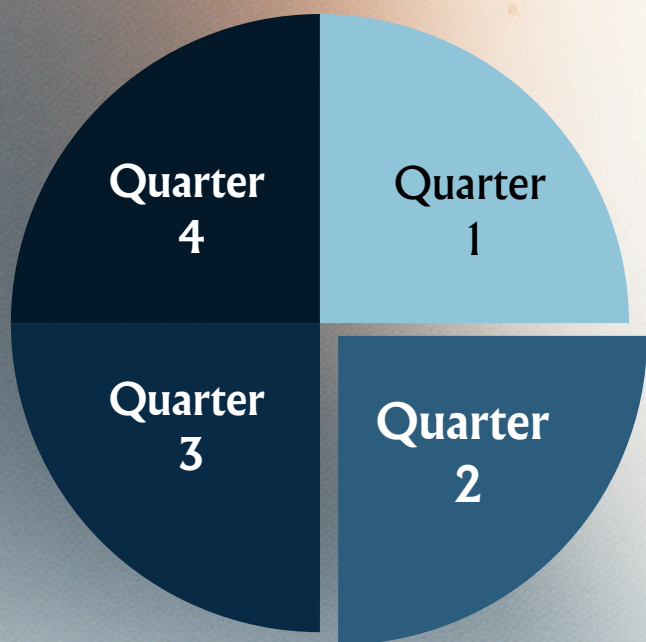
Quarter 1: The Physical World

Foundations of Robotics & Hardware

Get your hands dirty with the fundamentals. You'll learn circuit theory, master C++ on an Arduino, and build your very first robot from scratch. You'll even design and 3D print custom parts to give your creation a unique edge.

PROJECT SPOTLIGHT:

Build an Autonomous Obstacle-Avoiding Robot Assemble and program a physical robot that can navigate a room and intelligently avoid collisions using its sensors.



Quarter 2: The Software World

Mastering ROS & Simulation

Transition to the professional tools of robotics. You will master the Linux command line and the Robot Operating System (ROS). Learn to create a "digital twin" of a robot in the Gazebo physics simulator, the ultimate sandbox for development.

PROJECT SPOTLIGHT :

Pilot a Teleoperated Mars Rover. Model a rover with advanced sensors and drive it across a simulated Martian landscape using a custom ROS control node.

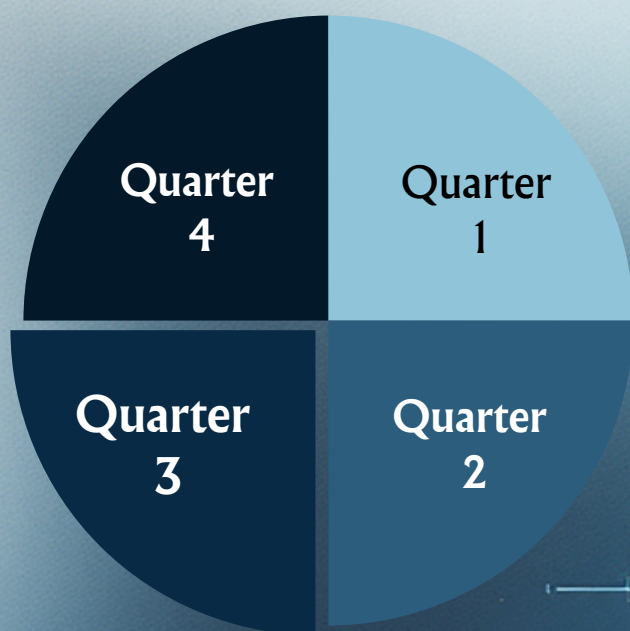
Quarter 3: Autonomous Intelligence

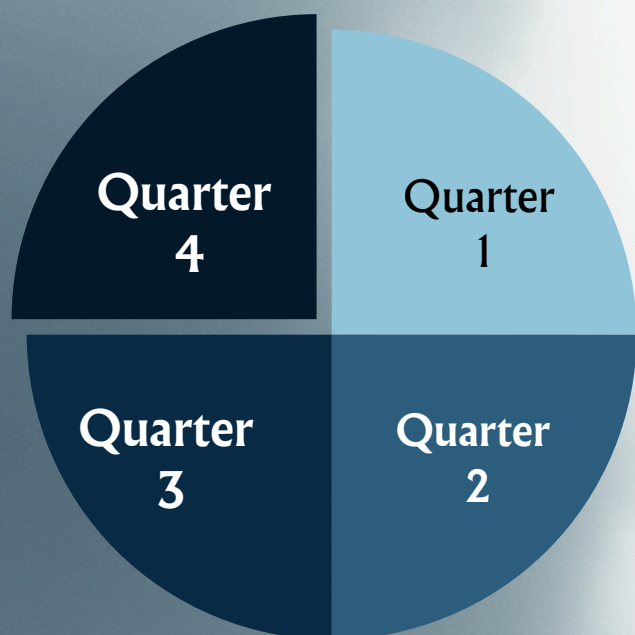
Navigation & Mapping

Give your robot a mind of its own. This quarter is a deep dive into the algorithms that power autonomous vehicles. You will use the ROS Navigation Stack to command your robot to map an unknown area and then navigate it without human intervention.

PROJECT SPOTLIGHT :

Deploy an Autonomous Warehouse Bot. Program your robot to execute a multi-step mission, navigating to a sequence of waypoints in a simulated warehouse.



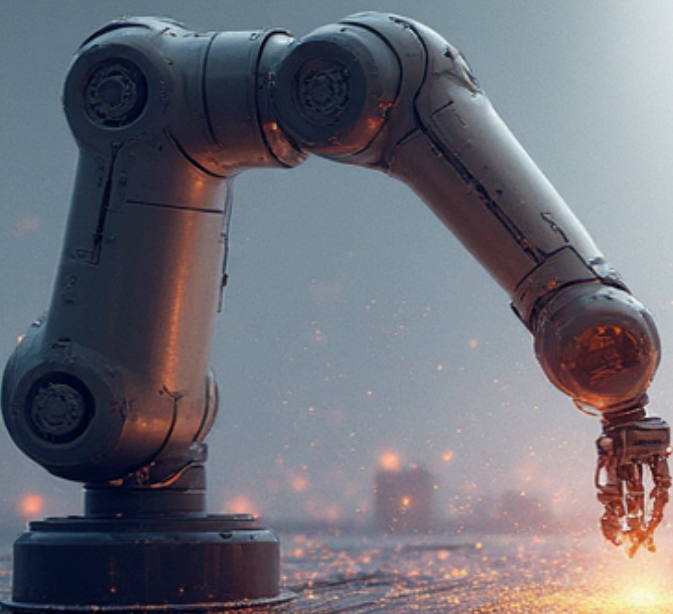


Quarter 4: Advanced Interaction Manipulation & Vision

Reach the pinnacle of robotics: interaction. Teach your robot to see with computer vision and control a 6-DOF robotic arm with the powerful MoveIt! motion planner. This is where your robot learns to not just move through the world, but to change it.

PROJECT SPOTLIGHT :

Program an Automated Pick-and-Place Butler
The final capstone: create a system that autonomously detects an object, plans a collision-free path to pick it up, and moves it to a new location.



TECHNOLOGIES YOU'LL USE

Hardware & Embedded:

Arduino Uno:
Microcontroller platform

Breadboarding:
Circuit prototyping

Motors, Servos, Sensors:
Actuators & Perception

3D Printing:
Custom fabrication

Software & Programming:
C++: For microcontroller
programming

Python:
For ROS nodes & high-level logic

Ubuntu Linux: Standard OS for ROS

ROS (Robot Operating System 1):
The core framework

Robotics Tools & Libraries:
Gazebo: High-fidelity physics
simulator

RViz:
3D visualization tool

URDF & XACRO:
Robot modeling

OpenCV:
Computer Vision library

MoveIt!:
Motion planning for robot arms

ROS Navigation Stack:
SLAM, AMCL, Move Base

Course Details

- Duration: One Year (Four 12-week quarters)
- Format: Hybrid (Online lectures with in-person lab access)
- Prerequisites: None. All you need is a passion for learning and creating.
- Includes: Robotics starter kit, software setup guides, and full project source code.

Enroll Today and Start Building!

Ready to begin your journey? Scan the QR code or visit our website for course dates, tuition information, and to secure your spot.



TAKE YOUR DEVICE



SCAN THE QR



MAKE THE PAYMENT



GET THE SERVICE

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