

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Engineering Design - NOC:Introduction to Robotics

Subject Co-ordinator - Dr. Krishna Vasudevan, Dr. Balaraman Ravindran, Dr. T Asokan

Co-ordinating Institute - IIT - Madras

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction
Lecture 2 - Evolution of Robotics
Lecture 3 - Kinematics- Coordinate transformations
Lecture 4 - Homogeneous Transformation Matrix
Lecture 5 - Industrial Robot- Kinematic Structures
Lecture 6 - Robot Architectures
Lecture 7 - Kinematic Parameters
Lecture 8 - DH Algorithm
Lecture 9 - DH Algorithm- Examples
Lecture 10 - Forward Kinematics
Lecture 11 - Forward Kinematics- Examples
Lecture 12 - Inverse Kinematics
Lecture 13 - Inverse Kinematics- Examples
Lecture 14 - Differential Relations
Lecture 15 - Manipulator Jacobian and Statics
Lecture 16 - Overview of Electric Actuators and Operational Needs
Lecture 17 - Principles of DC Motor Operation
Lecture 18 - DC Motor Equations and Principles of Control
Lecture 19 - DC Motor Control Regions and Principles of Power Electronics
Lecture 20 - Power Electronic Switching and Current Ripple
Lecture 21 - The H-Bridge and DC Motor Control Structure
Lecture 22 - The Brushless DC Machine
Lecture 23 - Control of the Brushless DC Motor
Lecture 24 - The PM Synchronous Motor (PMSM) and SPWM
Lecture 25 - Principles of PMSM Control
Lecture 26 - Encoders for Speed and Position Estimation
Lecture 27 - Stepper Motors
Lecture 28 - Introduction to Probabilistic Robotics.
Lecture 29 - Recursive State Estimation

Get Digi-MAT (Digital Media Access Terminal) For High-Speed Video Streaming of NPTEL and Educational Video Courses in LAN

www.digimat.in

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

- Lecture 30 - Recursive State Estimation
- Lecture 31 - Probability basics
- Lecture 32 - Probability basics
- Lecture 33 - Kalman Filter
- Lecture 34 - Extended Kalman Filter
- Lecture 35 - Particle Filter
- Lecture 36 - Binary Bayes
- Lecture 37 - Velocity Motion Model
- Lecture 38 - Odometry Motion Model
- Lecture 39 - Occupa Grid Mapping
- Lecture 40 - Range Finder Measurement Model
- Lecture 41 - Localization Taxonomy
- Lecture 42 - Markov Localization
- Lecture 43 - Path Planning