

Introduction to Robot Operating System

Overview

This course gives an overview of the Robot Operating System (ROS), an open source system (BSD license) used widely for working with all kinds of robots, both in research area and is starting to be used commercially. The course offers an exciting combination of theory and practice.

Robot Operating System provides libraries and tools to help software developers create robot applications. It includes hardware abstraction, device drivers, libraries, visualizers, message-passing, package management, and more. ROS is being used for many of the world's most exciting and capable robots. The developer community and support for using ROS with robots now makes this an excellent choice for a large variety of research programs.

Participants will be exposed to a number of topics associated to robotics, with practical examples which will allow to understand very easily how to construct modules for manipulating robot signals, thus experimenting with actuators and sensors of different kind.

Course participants will learn these topics through lectures and hands-on experiments. Also case studies and assignments will be shared to stimulate research motivation of participants.

Modules	1: Introduction to Robotics 2: Getting Started Robotics with ROS 3: Robotic Actuators 4: Robotic Sensors 5: Vision Sensors 6: Speech Recognition and Synthesis 7: Artificial Intelligence modules
You Should Attend If...	You are a graduate student or an Engineer interested in Robotics You are an Electronics engineer interested in Artificial Intelligence You are a PhD Scholar or Research Scientist or a Young Faculty interested in Artificial Intelligence
Fees	Participants from Abroad: US \$600 Industry/ Research Organizations: Rs. 6000/- Faculty Members / Researchers: Rs. 2000/- Students (pursuing PhD/ Masters / Bachelors courses): Rs 1000/- NIT Mizoram: Free (Faculty / Student / Researcher) The above fee include all instructional materials, computer use for tutorials, free internet facility. The participants will be provided with single bedded accommodation on payment basis. To register or for any questions please send an email to parthapakray@nitmz.ac.in .

The Faculty



Prof. David Pinto obtained his PhD in artificial intelligence and pattern recognition at the Polytechnic University of Valencia, Spain in 2008. At present he is a full time professor at the Faculty of Computer Science of the Benemérita Universidad Autónoma de Puebla (BUAP), Mexico. His areas of interest include clustering, information retrieval, cross-lingual NLP tasks, computational linguistics, robotics, augmented reality, virtual reality, mobile devices and complexity theory. He has written more than 100 papers and has developed research projects, whose products have been registered in the Mexican Institute of Industrial Property.

He has created various laboratories, being the last one, the Language & Knowledge Engineering Lab, which several national and international researchers have visited for establishing collaboration in different topics of artificial intelligence.

Dr. Pinto has a humanoid named Arthur, a robot capable of listening, viewing, speaking, understanding, but more interesting, being able to show emotional expressions. This robot is being used for projects such as the following ones: language disorder treatment, behavioral disorders detection, and diagnostics of serious medical illness such as depression.



Dr. Partha Pakray is the Head & Assistant Professor in the Department of Computer Science & Engineering at National Institute of Technology (NIT) Mizoram. His research interest is Natural Language Processing (Textual Entailment, Question Answering, Question Generation, Semantic Textual Similarity, and Information Retrieval).

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At

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