INTRODUCTION TO ROBOT PROGRAMMING

Instructor Profile
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Anoosha Shahid holds a Bachelor's degree in Computer Science from IBA and is currently pursuing her Masters from IBA. Having two years of corporate experience at ICI Pakistan Limited, where she worked as a Microsoft SharePoint Consultant, she has profound knowledge of this web technology.

Also to her credit are two Microsoft Certifications in SharePoint Designer 2010 and SharePoint Business Intelligence 2010. With first hand learning from the market itself, she is extremely well versed with the subject. Anoosha with her strong background will be able to deliver more than just the academic curriculum but will make this course fun too. She has conducted this course, Introduction to Robotic Programming, on various occasions in the past also at IBA.

Course Description:
This course is for students who have done their Matric/O-levels and Intermediate/A-levels. It introduces students to the world of robot programming. Using Microsoft Robotics Developer Studio and Lego Mindstorms, students would learn how to program different types of robots such as line follower, maze solver and sumo wrestler. The course would also introduce students to the fundamental of robotics, working of different sensors and how the overall robot control architecture works. The students would also learn state-of-the-art technology in the field of cognitive robotics, and how different competitions especially World RoboCup is driving the field by enhancing the skills of soccer playing robots, search and rescue robots and assistant robots via artificial intelligence.

Learning Outcomes:
At the end of the course student will be able to:

- Understand the fundamentals of cognitive robots and the context of artificial intelligence in robotics
- Understand the concept of sensors and actuators
- Have hands-on experience of assembling robots from Lego Mindstorms kits.
- Learn MRDS based programming for robot control
- Have hands-on experience of programming line follower, maze solver and sumo wrestler robots
- Get exposure to state-of-the-art competitions and developments in the field of cognitive robotics
**Teaching Methodology:**
Lectures will be used to introduce the fundamentals of cognitive robotics, functioning of sensors/actuators, working of robot control architecture and application of artificial intelligence in cognitive robotics. Laboratory hours will be used to teach robot programming using MRDS and Lego Mindstorms kits. Students will participate in different in-class competitions as they design line follower, maze solver and sumo wrestler robots. The activities/competitions will teach them the functioning of cognitive robots in a systematic manner.

**Course Duration:**
3 hours class for 5 days, IBA City Campus.
Dates: August 4, 2014 – August 8, 2014
Days: Monday-Thursday and Saturday
Timings: 12-3pm