

EN1-06: Simple Robotics

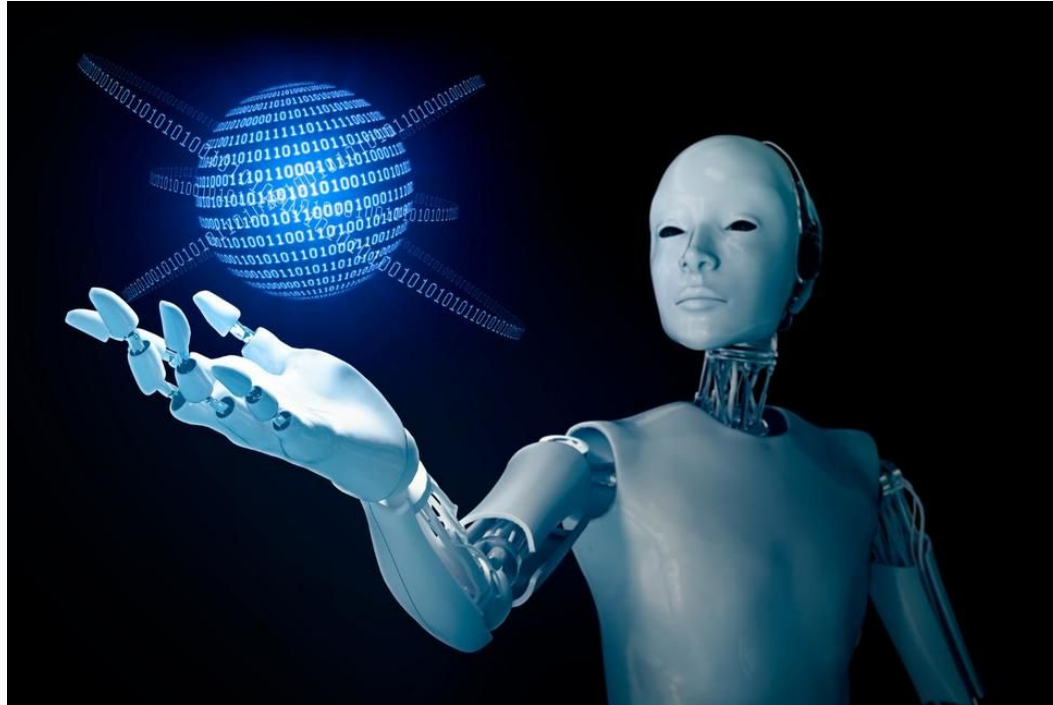
October 24th, 2016



Schedule

- In the News
- Visitor
- Assignment 5: Haunted House
- Help Videos Update
- LabVIEW Tutorial: Front Panel Picture Control

AI: A Good Thing, or Something That Will Kill Us All?



Visitor: Nalin

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Internship Opportunities:

<http://e-school.kmutt.ac.th/Upload/N11477193104.pdf>

Assignment 5: Haunted House

Project 5: Halloween Robot

EN1-06 Fall 2016

In-class Haunted House (at Tufts CEEO) due on Monday, October 31st, 2016

Documentation (description, images, videos, code, etc) due to website by Mon (10/31) by 9pm

Project Description: For Halloween (Oct 31st), you are going to create interactive robotic Halloween exhibits that will be part of a Haunted House hosted by the Tufts University Center for Engineering Education and Outreach (CEEEO), located at 200 Boston Ave, Suite G810.

Details (Hardware/Software): You will use your LEGO MINDSTORMS EV3 Kit for doing the sensing, thinking, and actuating (perhaps with assistance from your computer, e.g. sounds). Some Halloween themed supplies will be provided by the instructor. Beyond that, you can use any additional materials (you find or create) for implementing your Halloween robot. You will be programming your robot in LabVIEW. You can run your code in **Main Application Instance** (via the computer) or deployed **Remotely**, whichever makes more sense for your individual project.

You will be combining pairs into small groups of four to work on this project; this means your group will now have access to two MINDSTORMS kits (and thus, two EV3s and twice the motors/sensors/parts as an individual kit). Also, with twice as many participants in your group, it is expected that the complexity of the robot/project should reflect the size of your group, in physical construction and programming. Your Halloween robot should react to user input (e.g. detect when someone is near? have a pushbutton input?) and perform some appropriate reaction/response. Your code should be more complex than just "wait for sensor, initiate motors, loop"; there are multiple ways to achieve this (brick-to-brick communication, interacting with front panel controls, etc). The emphasis for this project should also be reliability, repeatability (robot needs to function for 45-minutes as multiple people interact with it), and stability.

Help Videos (on course website)

The screenshot shows the website header with the title "Simple Robotics Fall 2016" and navigation links for "Home", "About", and a user profile "Welcome Ethan!". Below the header is a navigation bar with "Lectures", "In the News", "Projects", and "Help Videos". The main content area is titled "Help Videos" and includes a link to the "Help Videos Category". The content is organized into three columns of video links:

- Hardware: Intro**
 - [Overview of the LEGO MINDSTORMS EV3 Kit](#)
 - [Overview of the EV3 Brick](#)
 - [How to do On Brick Programming](#)
- Hardware: Building**
 - [Different Pieces](#)
 - [Sturdy Structures](#)
 - [Motors](#)
 - [Ball Caster](#)
 - [Tracks](#)
- Hardware: Gears**
 - [Gear Overview](#)
 - [Calculating Gear Trains](#)
 - [Bevel Gears](#)
 - [Worm Gear](#)
- LabVIEW Basics: Intro**
 - [Intro to LabVIEW](#)
 - [Front Panel and Block Diagram](#)
 - [Targeting in LabVIEW](#)
 - [The Terminal](#)
- LabVIEW Basics: First VI**
 - [First VI](#)
 - [Modifying First VI](#)
 - [Wait for Sensor](#)
- LabVIEW Basics: Motors**
 - [Brake vs. Coast](#)
 - [Turning Robot](#)
- LabVIEW Data Types**
 - [Basic Data Types](#)
 - [Array Data Type](#)
 - [Cluster Data Type](#)
- LabVIEW Structures**
 - [Structures Overview](#)
 - [Stacked Sequence](#)
 - [Case Structure](#)
 - [For Loop](#)
 - [While Loop](#)
 - [Input Tunnel](#)
 - [Output Tunnel Mode](#)
 - [Shift Registers](#)
- LabVIEW Tips and Tricks**
 - [Tips and Tricks Overview](#)

- Hardware
- Intro to LabVIEW (first VI)
- LabVIEW Data Types
- LabVIEW Structures
- LabVIEW Tips and Tricks

LabVIEW Tutorial: Front Panel Picture Control

