

The Robot Program Episode 003: Getting JD to Move

This lesson will demonstrate how to connect to and move the [b]Revolution JD[/b] robot. Follow along with [b]The Robot Program Episode 003: Getting JD to Move[/b]. At the end of this lesson, the reader will have learned how to connect to the robot using Wi-Fi, how to create and save a servo profile, and how to use the [b]Auto Position[/b] and [b]Soundboard[/b] controls to execute movements and routines. View the video episode here: <https://www.ez-robot.com/Tutorials/Lesson/32>

Last Updated: 6/12/2018

Professor E's Overview

This lesson demonstrates how to connect to **JD** for the first time.

Remember to start with a fully charged robot. Load the **Example Project** for **JD** and connect to the robot using Wi-Fi. Sometimes the servos of the robot will need to be adjusted to correct any minor hardware displacement. The **EZ-Builder** software can be used to create and save a servo profile. The arms and legs of the robot should be aligned, and there should not be any grinding or vibrating sounds.

Once **JD** is calibrated and connected, use the **Auto Position** and **Soundboard** controls to execute pre-built actions and routines. Remember to disconnect, power off, and charge the robot when finished.



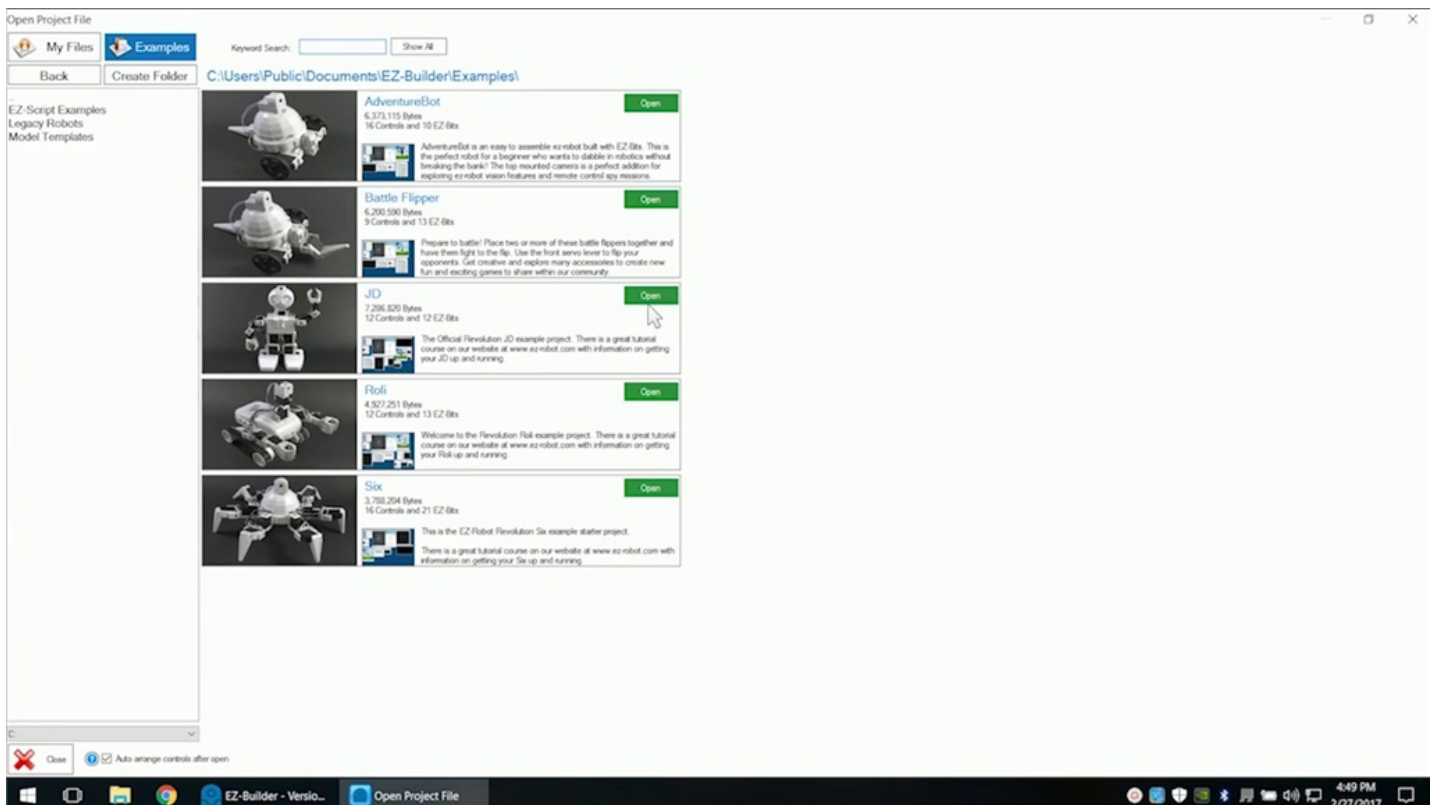
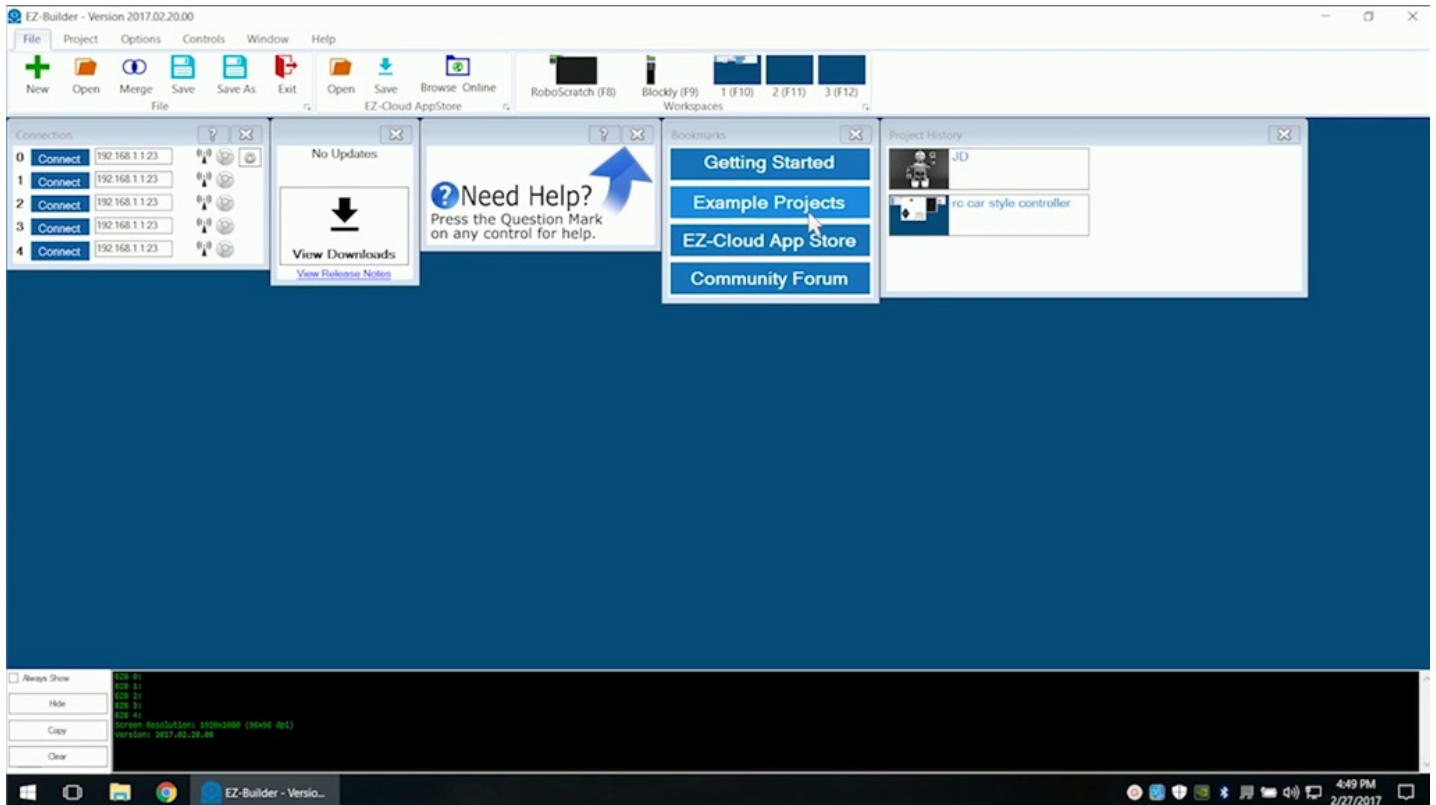
Step 1

Always start with a fully charged robot. Disconnect from the battery charger.



Step 2

Open **EZ-Builder**. Select **Example Projects** and load the **JD** project. See how to download the software and build **JD** in **Episode 002**.



Step 3

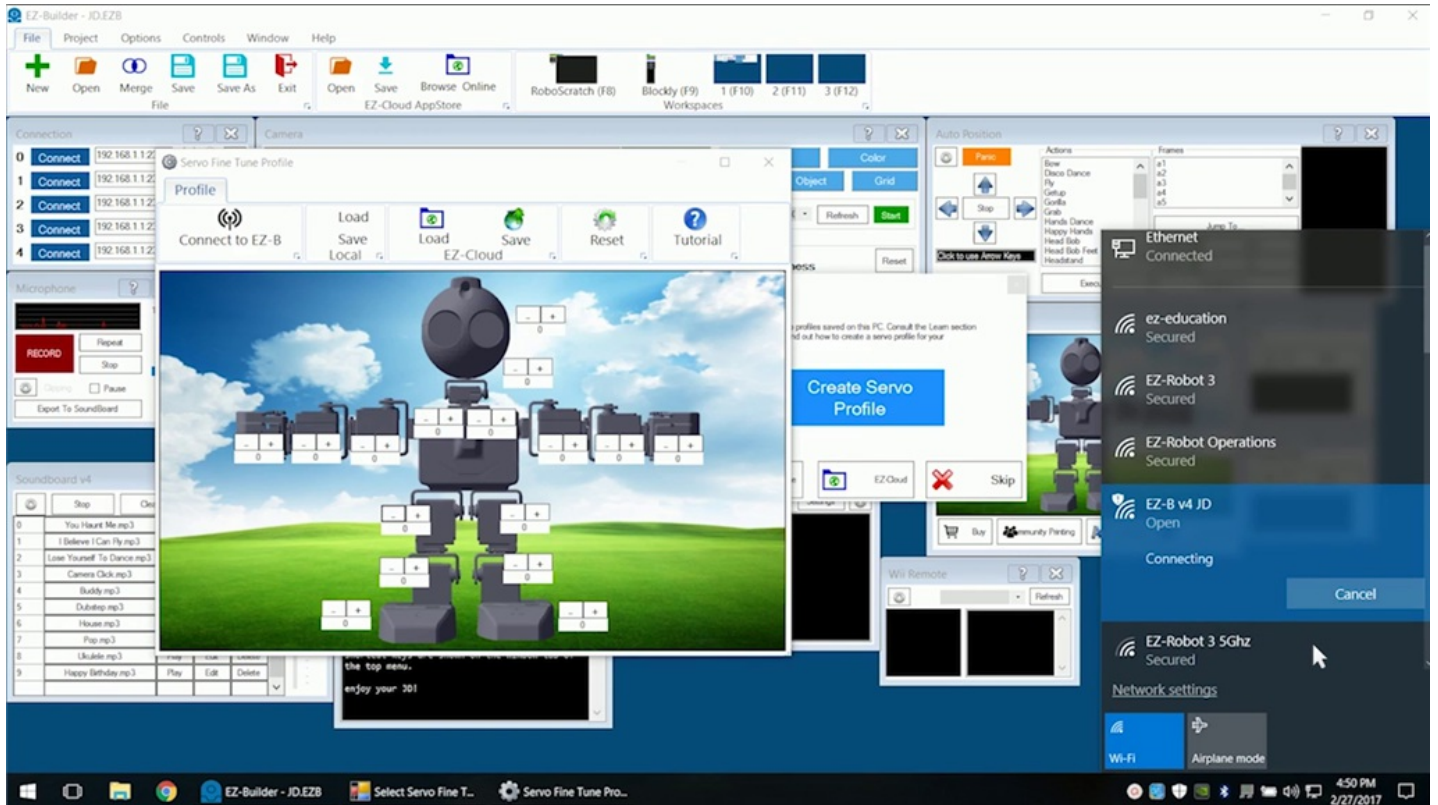
The servos may need calibration to compensate for any slight hardware discrepancies. Select **Create Servo Profile** and power on the robot.

The screenshot displays the EZ-Builder software interface. A central dialog box titled "Select Servo Fine Tune Profile" is open, featuring a "Create Servo Profile" button. The background interface includes a menu bar (File, Project, Options, Controls, Window, Help), a toolbar with icons for New, Open, Merge, Save, Save As, Exit, Open, Save, Browse Online, and EZ-Cloud AppStore, and a workspace area showing a camera feed of a robot. Other panels include Connection (listing IP addresses), Microphone (with RECORD, Repeat, Stop, and Export To Soundboard buttons), Soundboard v4 (with a table of audio files), Notepad (with text about the tutorial), Auto Position (with various action buttons), and a Wii Remote control panel. The Windows taskbar at the bottom shows the time as 4:49 PM on 2/27/2017.

Step	File Name	Play	Edit	Delete
0	You Heart Me.mp3	Play	Edit	Delete
1	I Believe I Can Fly.mp3	Play	Edit	Delete
2	Lose Yourself To Dance.mp3	Play	Edit	Delete
3	Camera Click.mp3	Play	Edit	Delete
4	Buddy.mp3	Play	Edit	Delete
5	Dubstep.mp3	Play	Edit	Delete
6	House.mp3	Play	Edit	Delete
7	Pop.mp3	Play	Edit	Delete
8	Ukulele.mp3	Play	Edit	Delete
9	Happy Birthday.mp3	Play	Edit	Delete

Step 4

Select the **EZ-B v4** Wi-Fi connection.



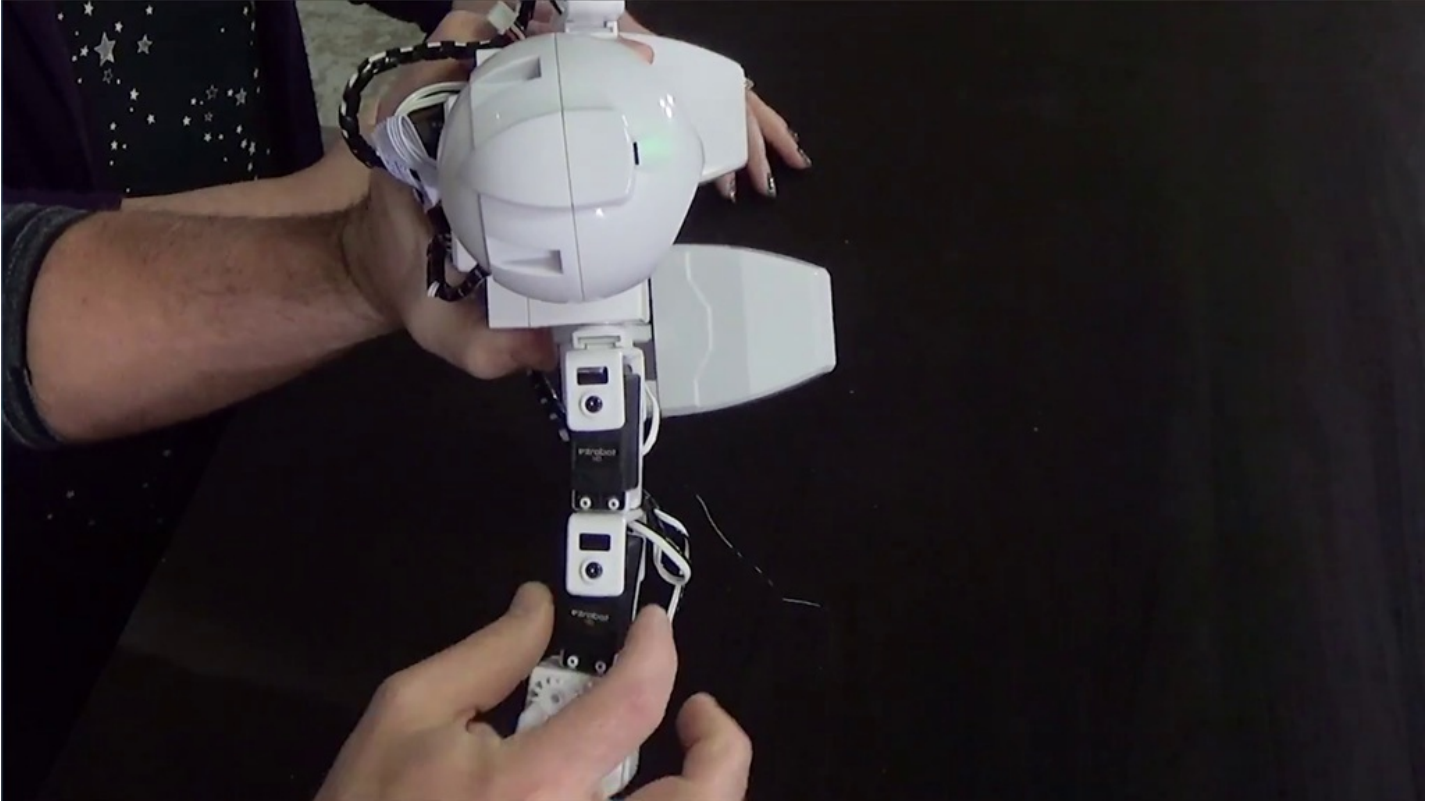
Step 5

Select Connect to **EZ-B**. The robot should move into the initialization position.

The screenshot displays the EZ-Builder software interface. The main window is titled "Servo Fine Tune Profile" and features a central 3D model of a robot with various servos. A "Profile" panel is visible, containing buttons for "Connect to EZ-B", "Load", "Save Local", "Load EZ-Cloud", "Save", "Reset", and "Tutorial". The "Connect to EZ-B" button is highlighted with a mouse cursor. To the right, there is an "Auto Position" panel with a "Start" button and a list of actions including "Size", "Deco Dance", "Fly", "Setup", "GoGo", "Grab", "Hands Dance", "Happy Hands", "Head Bob", and "Headstand". Below this, there are "Speed" and "Steps" controls. A "Wii Remote" panel is also visible at the bottom right. The bottom of the screen shows the Windows taskbar with the EZ-Builder application running.

Step 6

The servos of each arm and leg should be positioned in a straight line. Do not manually manipulate the servos when the robot is powered on.



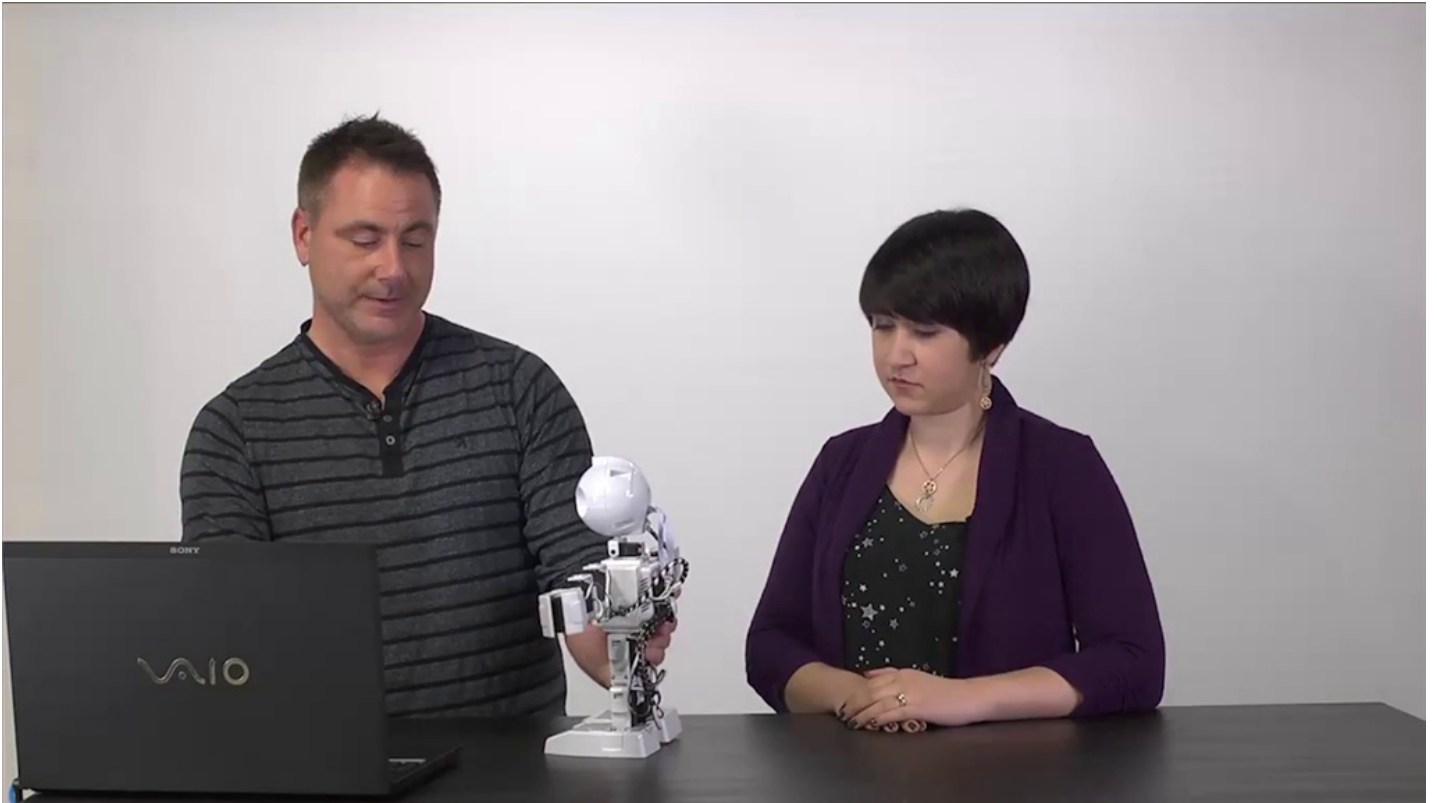
Step 7

Adjust the software servo values to line up each servo. Start with the servos closest to the body and move outwards.

The screenshot displays the EZ-Builder software interface for a robot. The central window shows a 3D model of a robot with several servo motors attached to its arms and legs. Each servo has a small control panel with a slider and a numerical value. The robot is positioned on a green field under a blue sky. The interface includes a menu bar at the top with options like File, Project, Options, Controls, Window, and Help. Below the menu bar is a toolbar with icons for New, Open, Merge, Save, Save As, Exit, Open, Save, Browse Online, EZ-Cloud AppStore, RoboScratch (F8), Blockly (F9), 1 (F10), 2 (F11), and 3 (F12). The main workspace is divided into several panels: a Connection panel on the left with a list of IP addresses (192.168.1.12) and a 'Connect' button; a Profile panel with buttons for 'Connect to EZ-B', 'Load', 'Save Local', 'Load EZ-Cloud', 'Save', 'Reset', and 'Tutorial'; a Microphone panel with 'RECORD', 'Repeat', 'Stop', 'Pause', and 'Export To Soundboard' buttons; a Soundboard v4 panel with a list of audio files and playback controls; a 'Create Servo Profile' dialog box with 'EZ-Cloud' and 'Skip' buttons; an 'Auto Position' panel with 'Frame' and 'Actions' tabs; a 'Wii Remote' panel with a 'Refresh' button; and a 'PointAndTrack' panel with 'Start' buttons. The bottom status bar shows the system tray with the time 4:51 PM and date 2/27/2017.

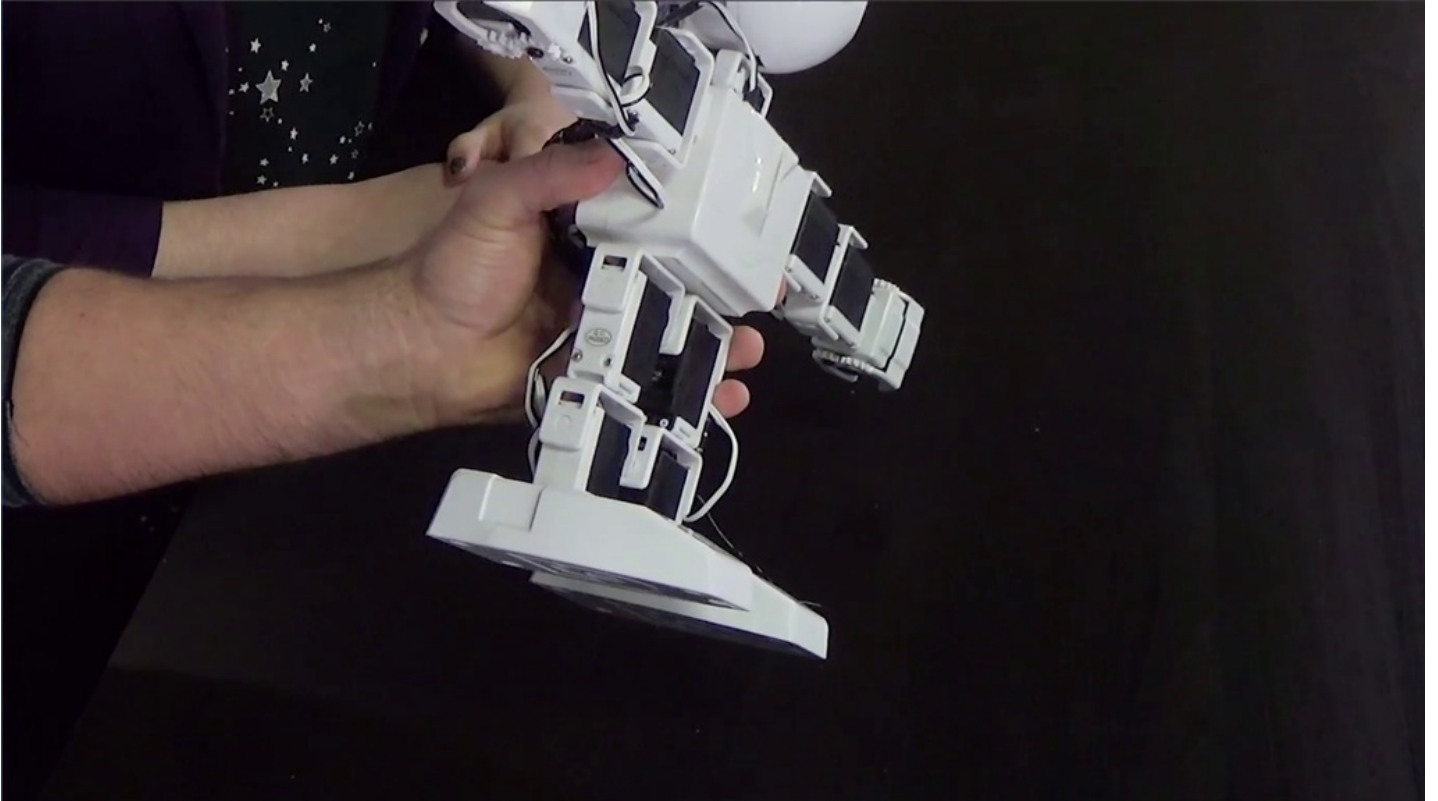
Step 8

Adjust the **Head Assembly Servos** if needed.



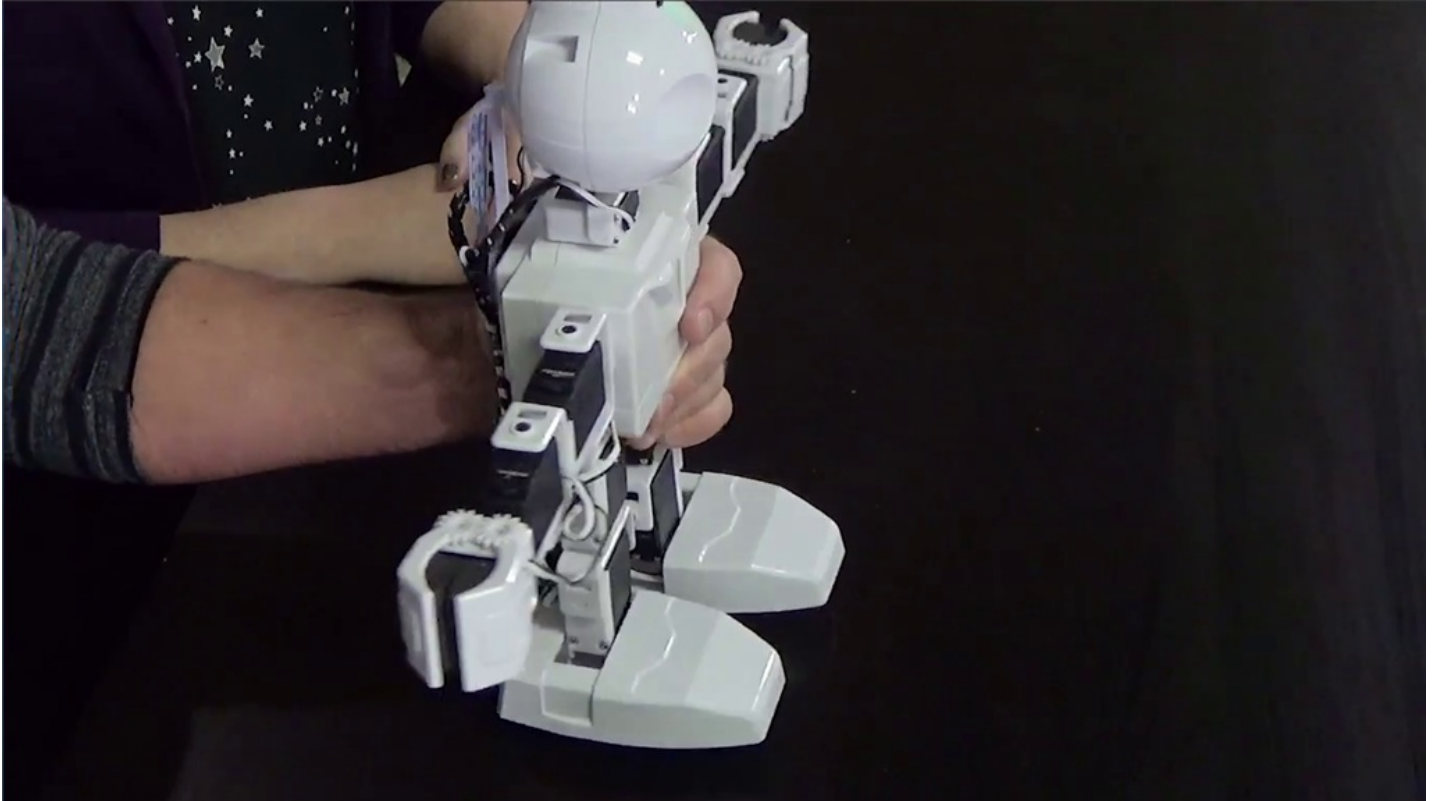
Step 9

Adjust the leg servos as needed. **JD** should stand evenly on both feet.



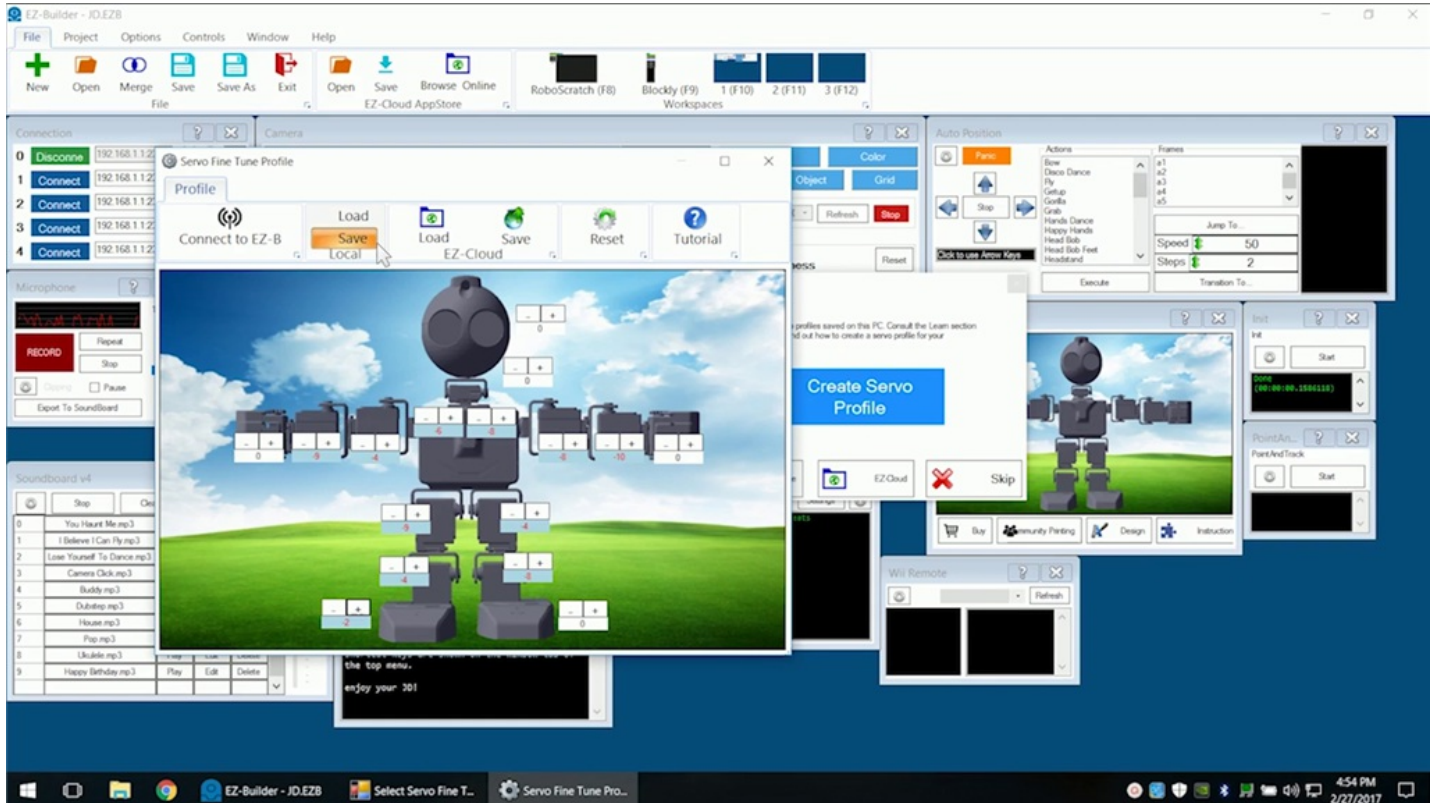
Step 10

Once the servos are aligned, there should not be any grinding or vibrating noises.



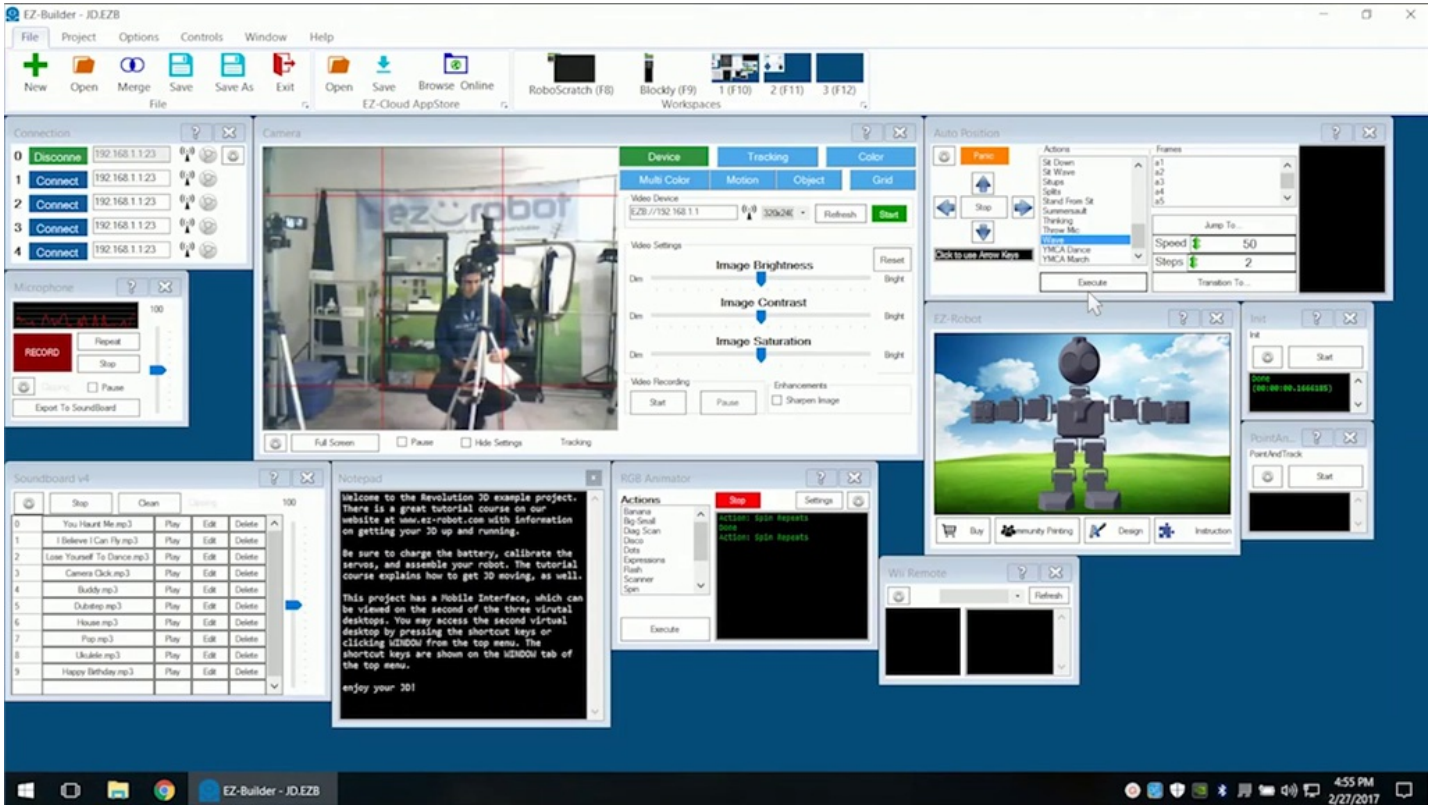
Step 11

Click on **Save** and save the servo profile for future project use. **JD** should now be connected to the software and ready for use.



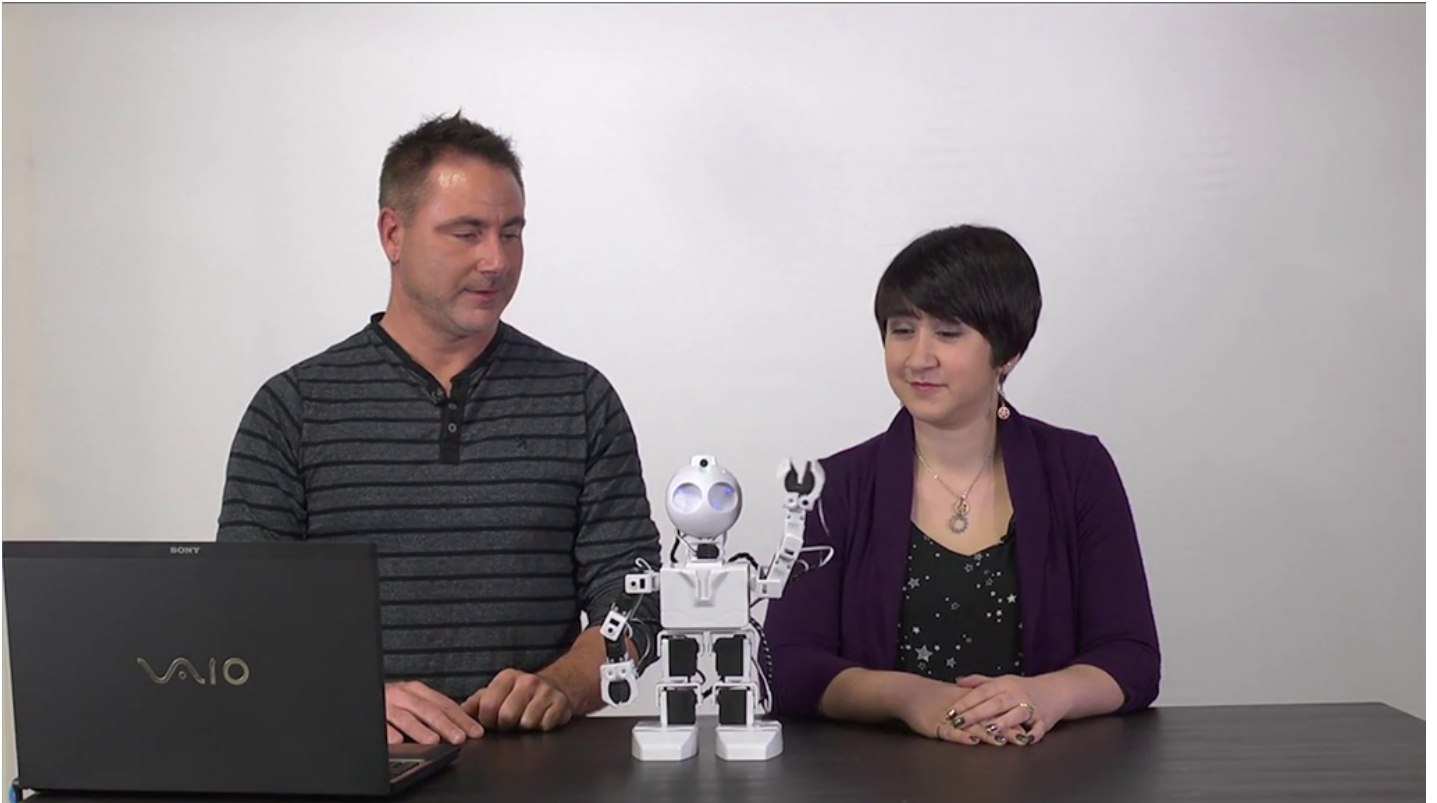
Step 12

There are many available controls in the **Example Project**. Scroll through the **Auto Position** actions to select the **Wave** command. Click the **Execute** button.



Step 13

JD should be waving his left arm. If not, try reviewing previous episodes for help.



Step 14

Try executing another pre-built command. In the **Soundboard** control, scroll to **I Believe I Can Fly** and select the **Play** button.

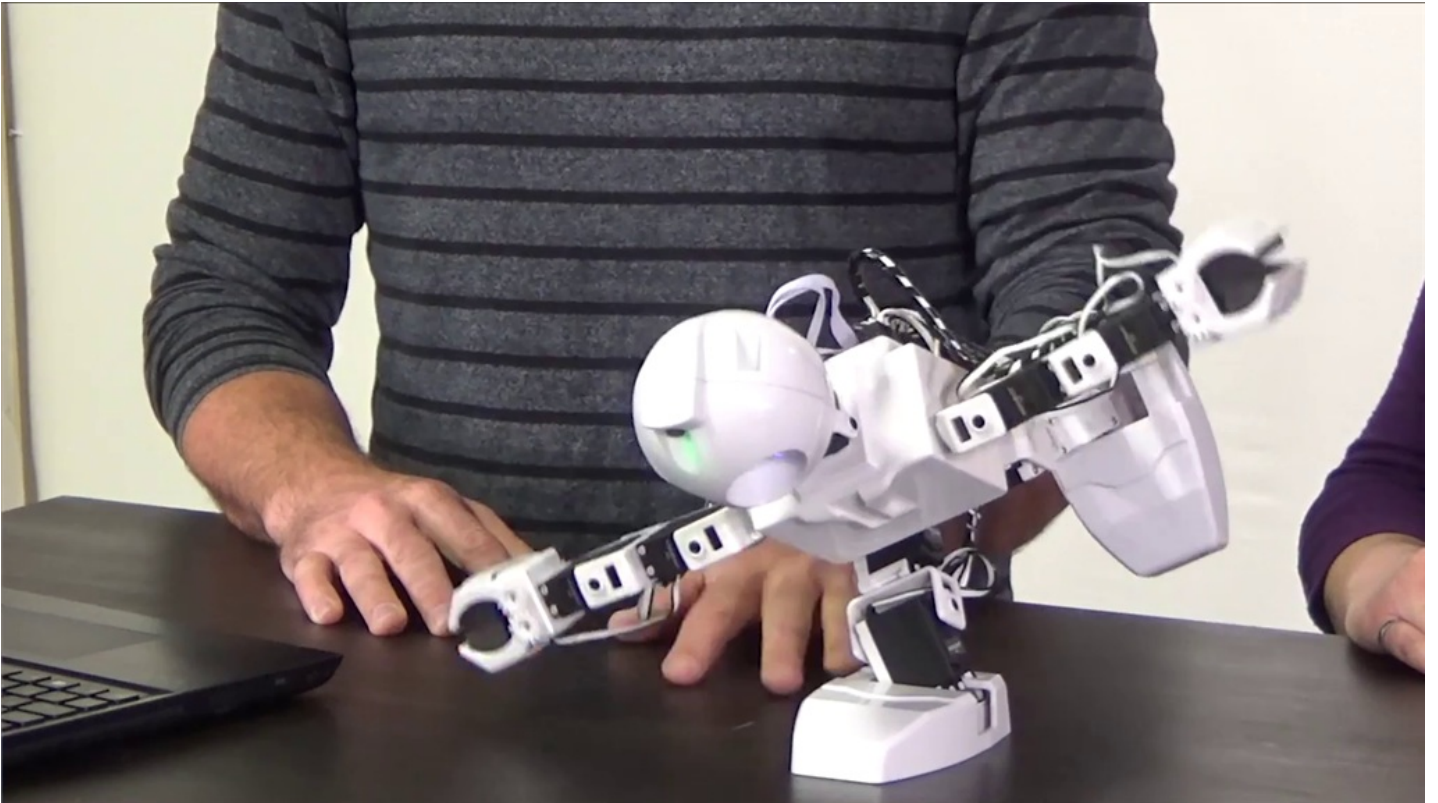
The screenshot displays the EZ-Builder software interface with the following components:

- File Menu:** Includes options like New, Open, Merge, Save, Save As, Exit, Open, Save, Browse Online, EZ-Cloud AppStore, RoboScratch (F8), Blockly (F9), 1 (F10), 2 (F11), and 3 (F12).
- Connection Panel:** Shows four connection slots, all labeled 'Connect' with IP address 192.168.1.123.
- Microphone Panel:** Features a volume slider at 100, a 'RECORD' button, and 'Repeat', 'Stop', 'Pause', and 'Export To Soundboard' buttons.
- Camera View:** A central window showing a live video feed of a person in a room with 'ez-robot' branding. It includes 'Image Brightness', 'Image Contrast', and 'Image Saturation' sliders, and 'Video Recording' controls.
- Device Tracking Panel:** Contains 'Multi Color', 'Motion', 'Object', and 'Grid' tabs, along with 'Video Device' and 'Start' buttons.
- Auto Position Panel:** Includes 'Frames' (a1-a5), 'Speed' (50), and 'Steps' (2) settings.
- Soundboard v4 Panel:** A table with columns for 'Step', 'Clean', and 'Steps'. It lists 9 audio files, with 'I Believe I Can Fly.mp3' selected and its 'Play' button highlighted.
- Notepad Panel:** Contains text instructions for the user, including 'Welcome to the Revolution 3D example project...' and 'Be sure to charge the battery...'.
- RGB Animator Panel:** Shows 'Actions' like 'Spin' and 'Settings'.
- EZ-Robot Panel:** Displays a 3D model of a robot on a green field.
- Wii Remote Panel:** Includes a 'Refresh' button.

The Windows taskbar at the bottom shows the time as 4:56 PM on 2/27/2017.

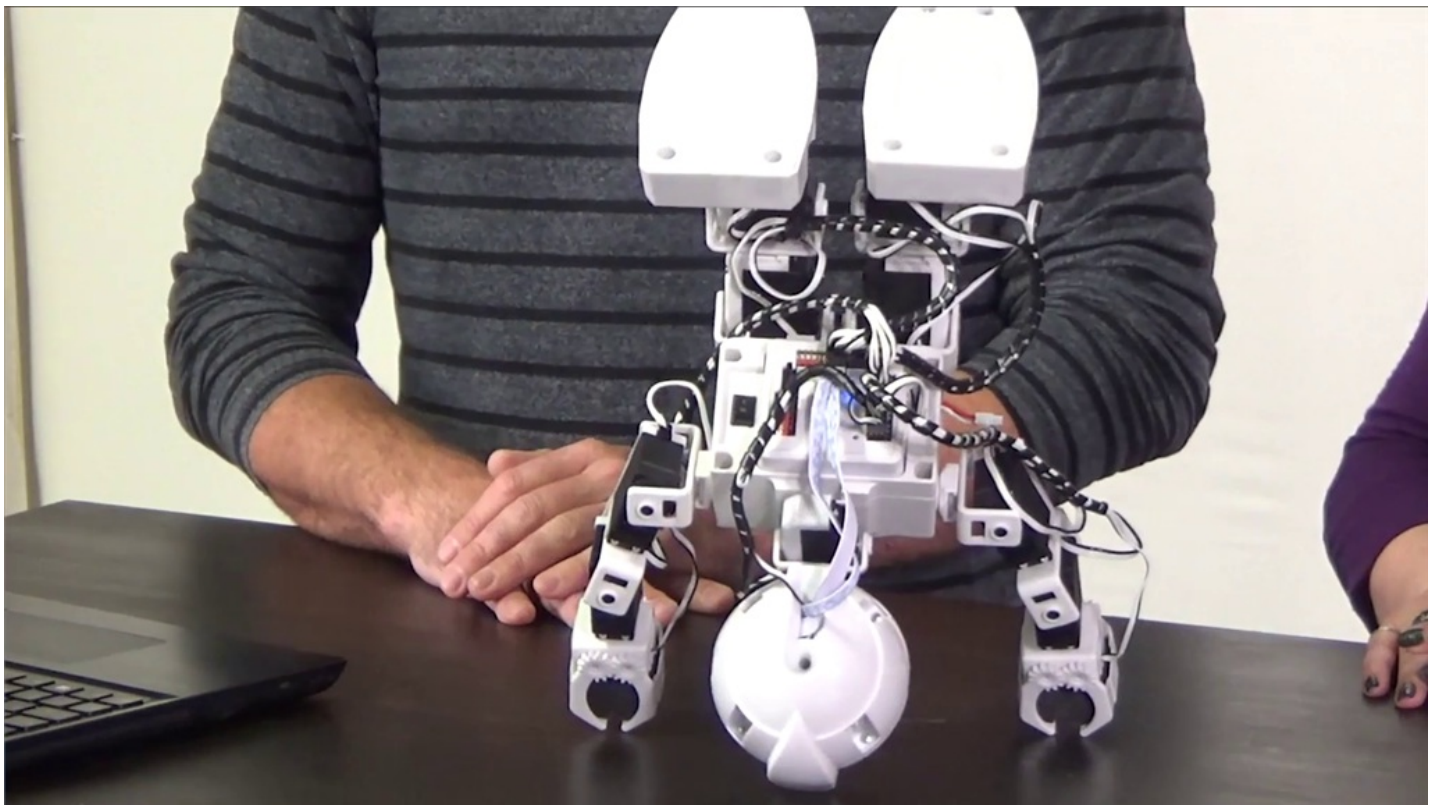
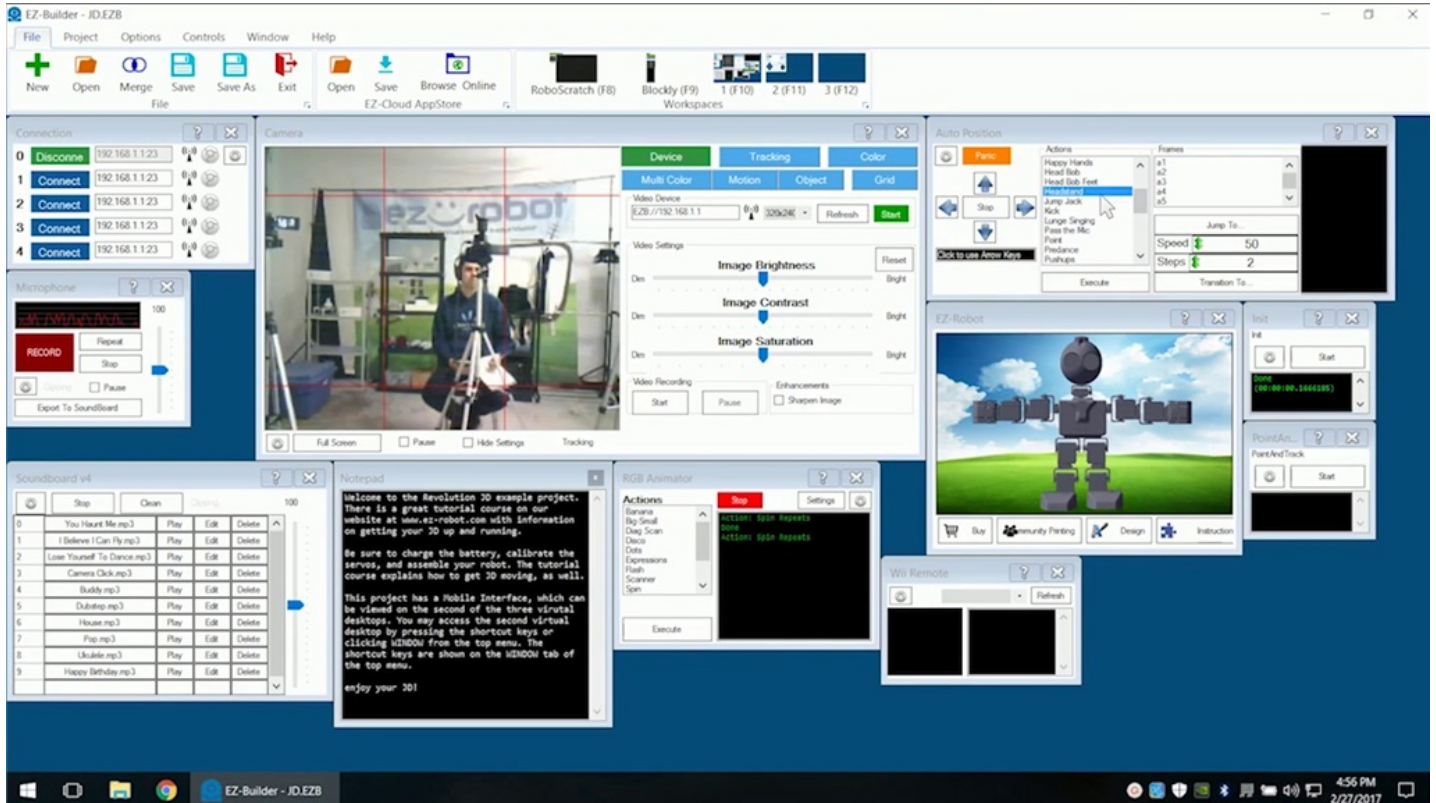
Step 15

Watch **JD** fly!



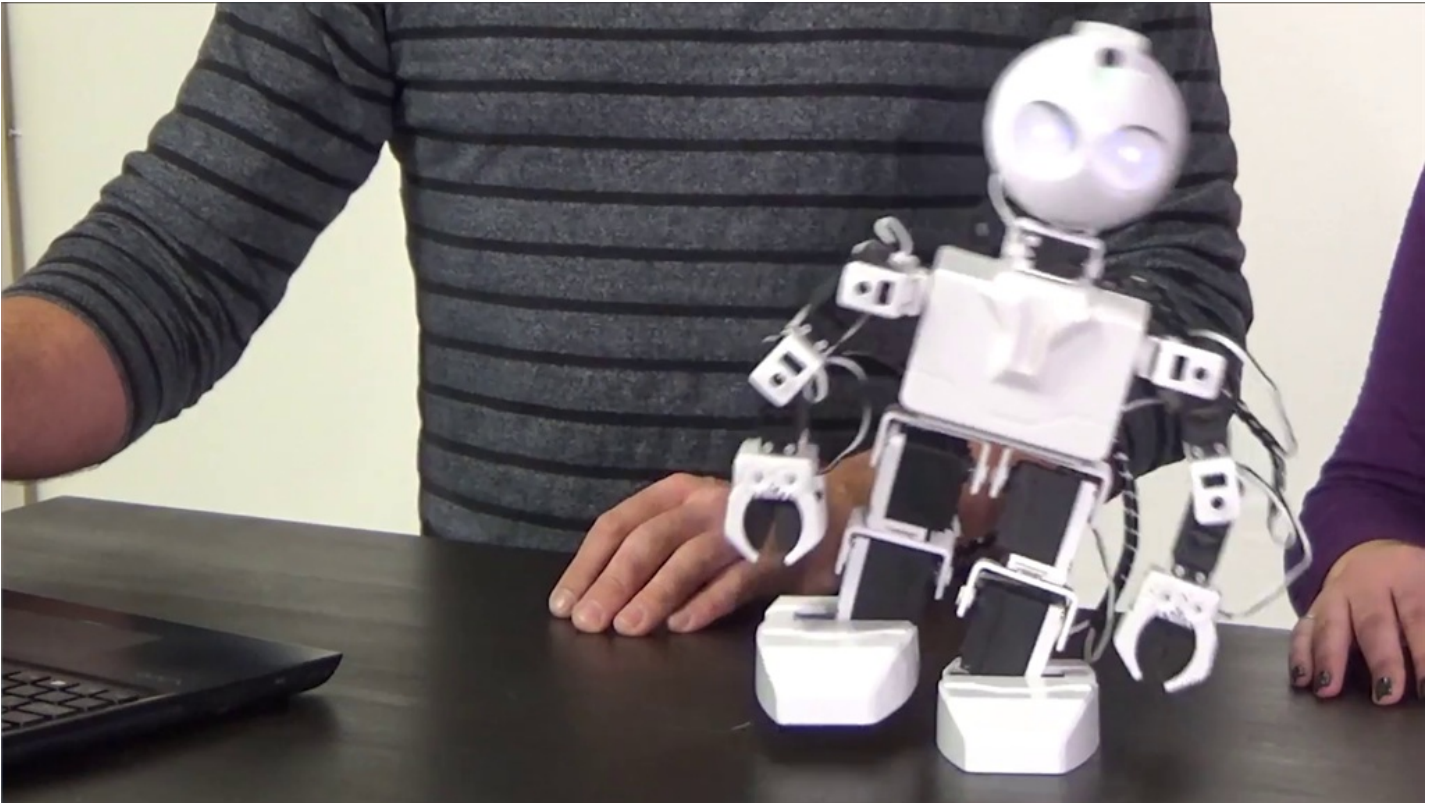
Step 16

Try another one. Select **Headstand** from the **Auto Position** control and execute. Make sure **JD** has lots of room.



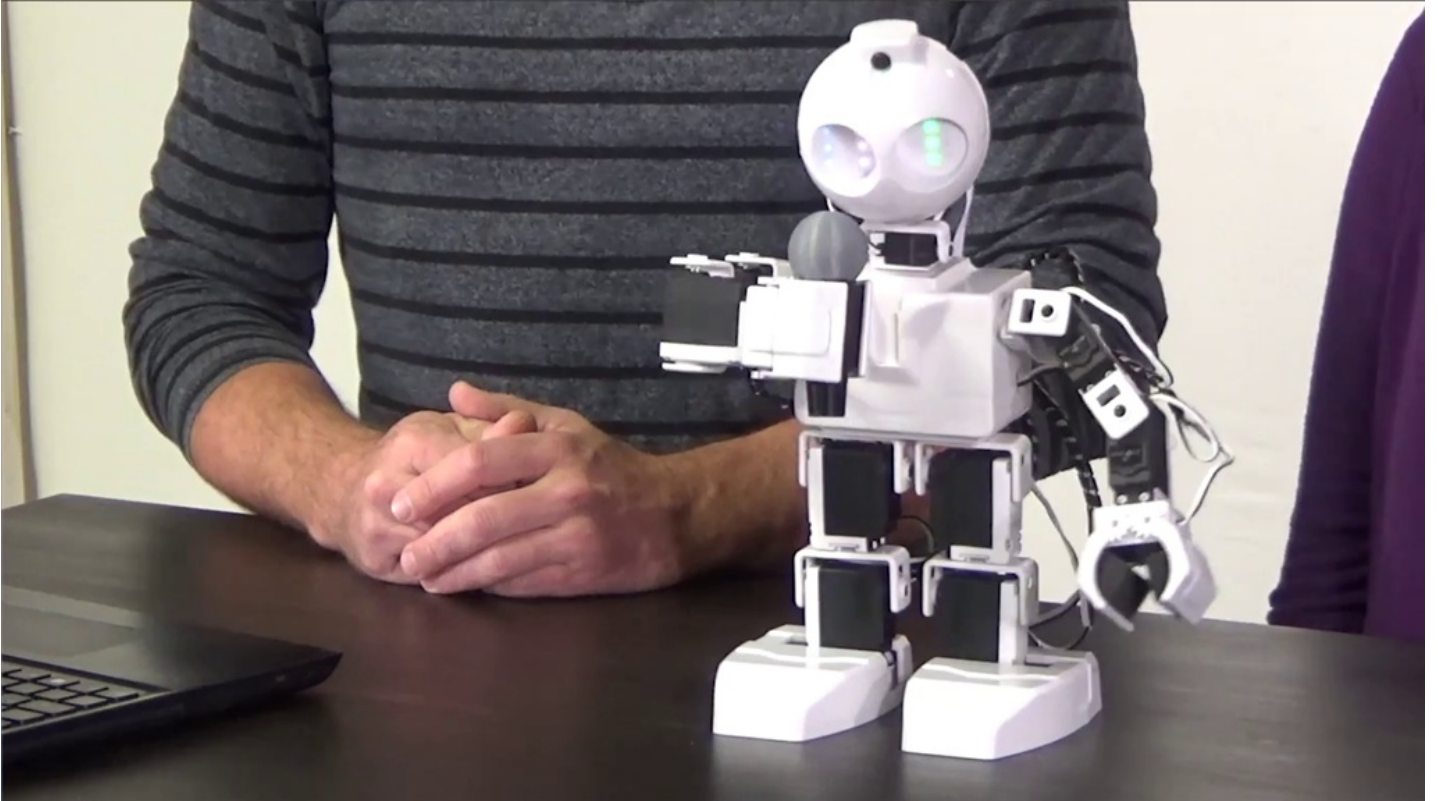
Step 17

Control walking movement using the arrow keys.



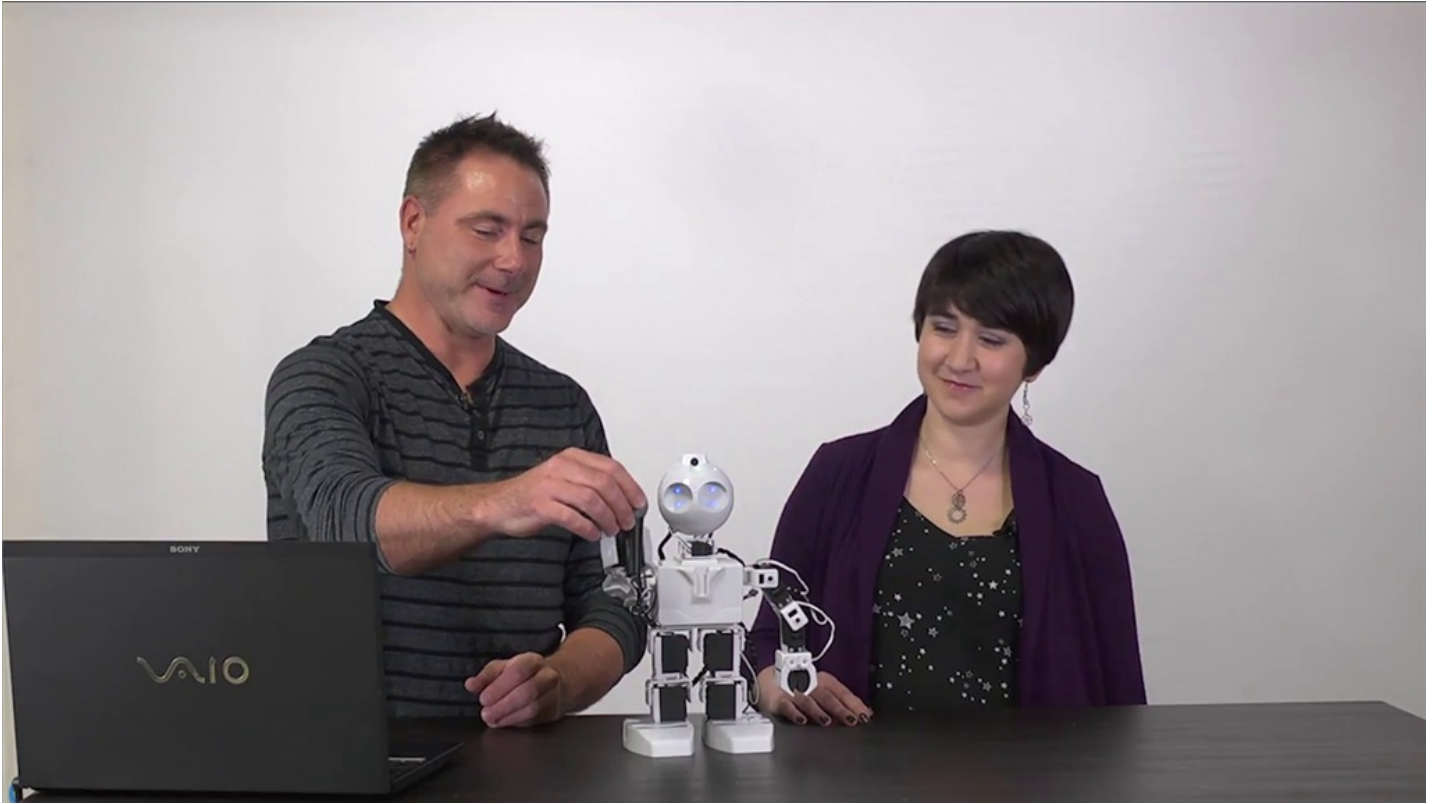
Step 18

Last one! **Choose You Haunt Me** from the **Soundboard** to see **JD** perform a routine.



Step 19

Continue to explore the available actions. Remember to disconnect, power off, and connect to the battery charger when finished.



Question #1

What letters are always at the start of the Wi-Fi connection name?

Question #2

What is a servo profile?

Question #3

What is the name of the control panel used to execute pre-built commands?

View the answers to this quiz at www.ez-robot.com/Tutorials/Lesson/32.

Visit www.TheRobotProgram.com for more episodes.