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The Robot Program Episode 003: Getting JD to Move

This lesson will demonstrate how to connect to and move the **Revolution JD** robot. Follow along with **The Robot Program Episode 003: Getting JD to Move**. 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 **Auto Position** and **Soundboard** controls to execute movements and routines.

View the video episode here: <https://www.ez-robot.com/Tutorials/Lesson/32>

Last Updated: 6/12/2018

⑤ 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.



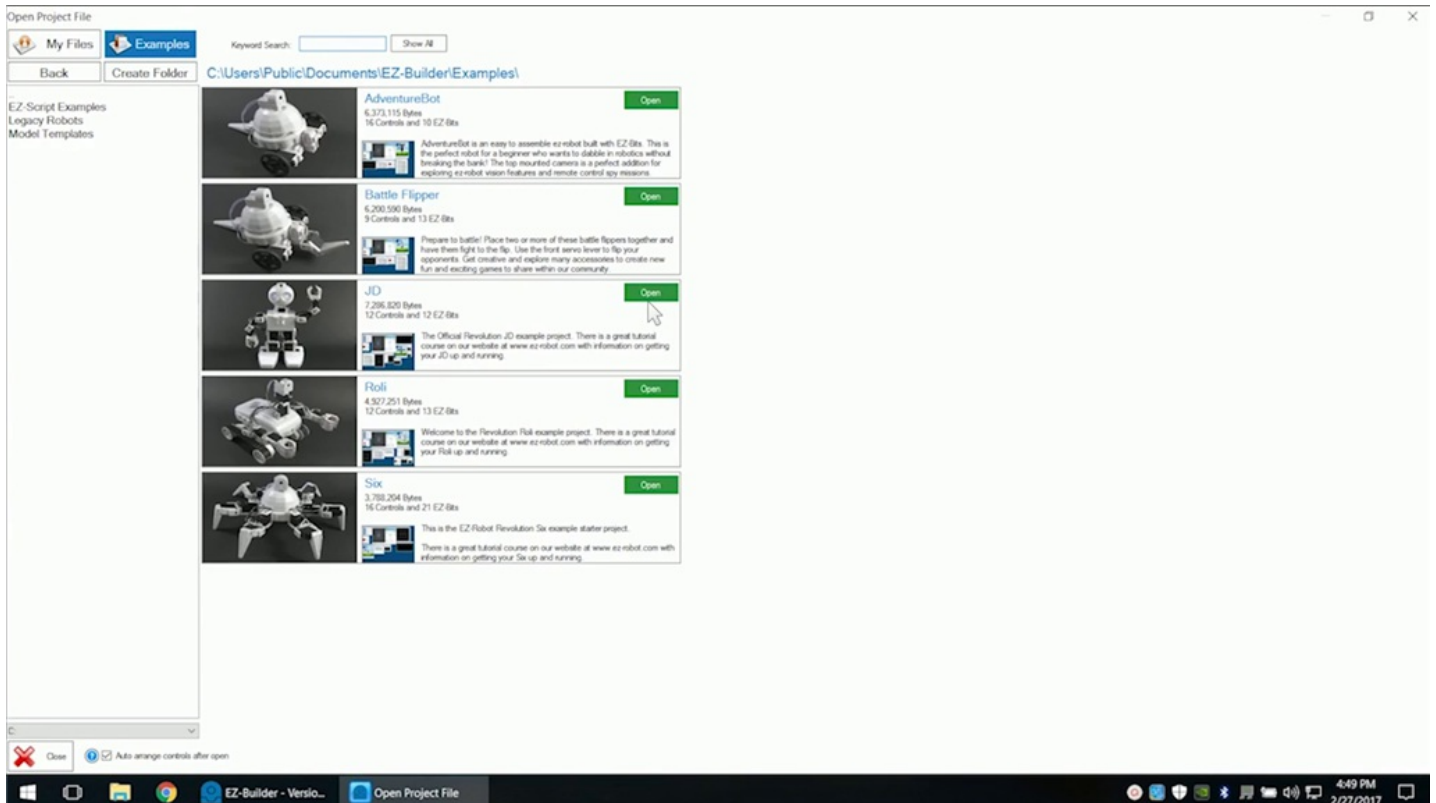
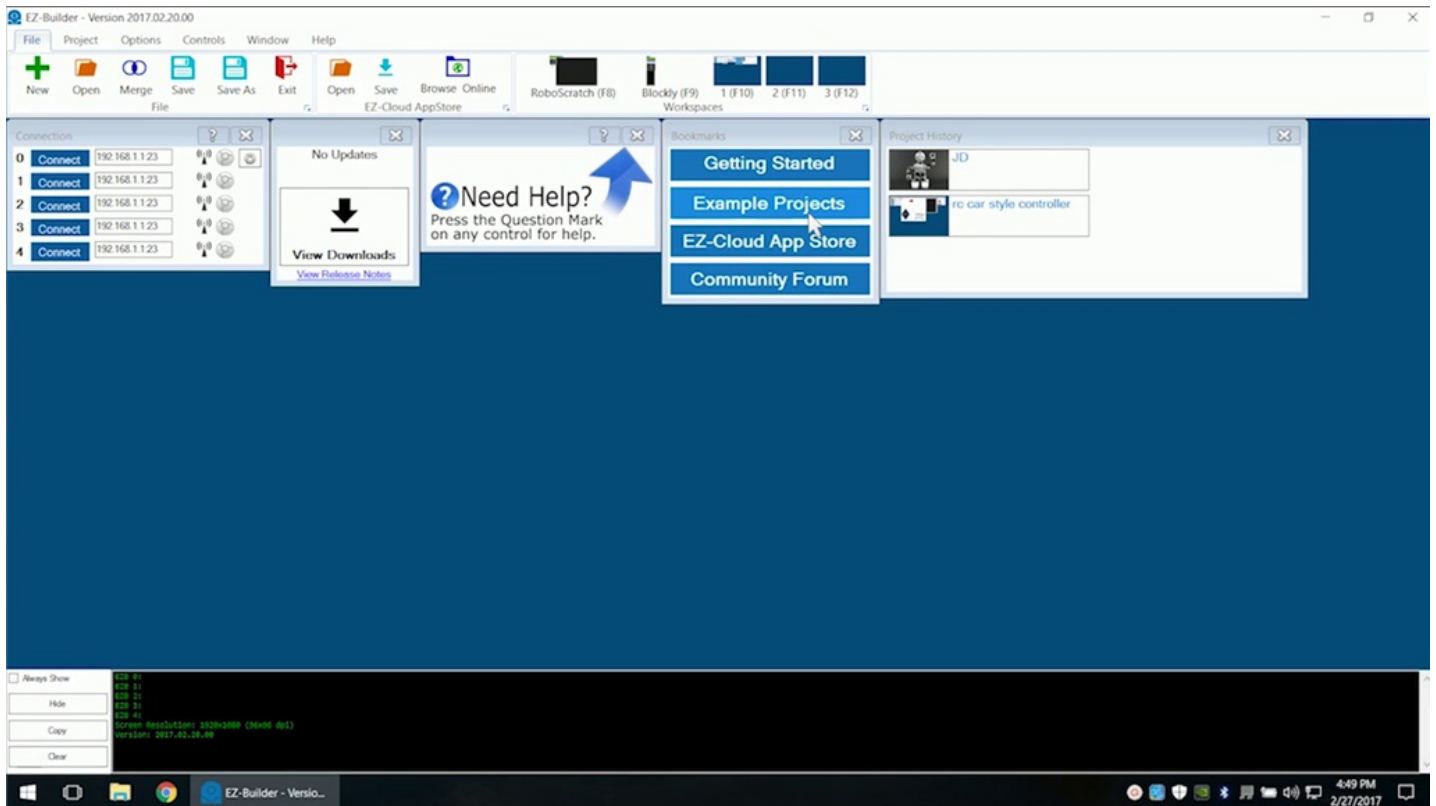
Step 1

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**.



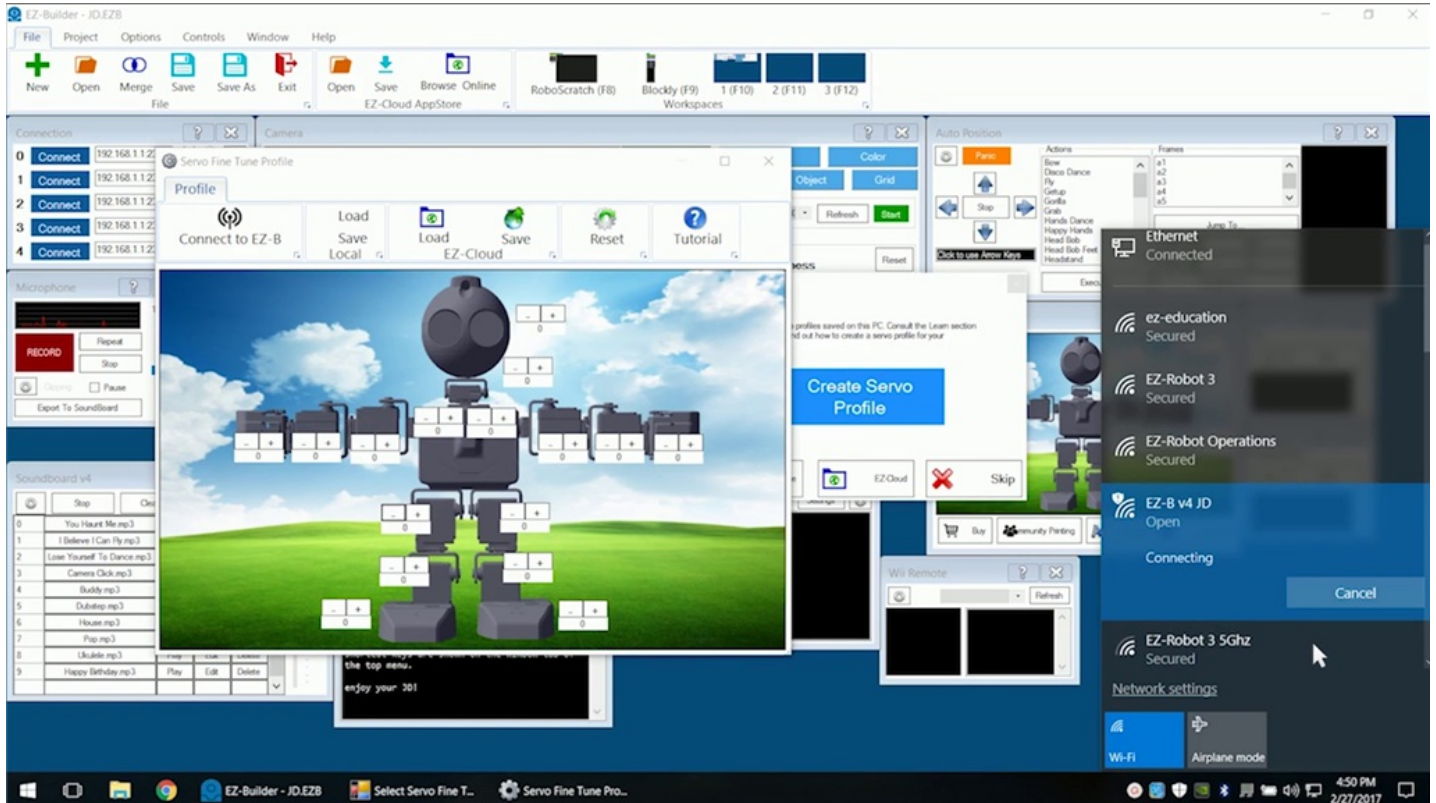
Step 3

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. The main workspace is divided into several panels: "Connection" (listing four connected devices at IP 192.168.1.123), "Camera" (with Device, Tracking, Color, and Video Settings tabs), "Auto Position" (with Actions and Frames lists), "Microphone" (with RECORD, Repeat, Stop, and Pause buttons), "Soundboard v4" (with a list of audio files), "Notepad" (with a welcome message and instructions), "Wii Remote" (with Refresh and Execute buttons), and "PointAndTrack" (with Start buttons). The Windows taskbar at the bottom shows the time as 4:49 PM on 2/27/2017.

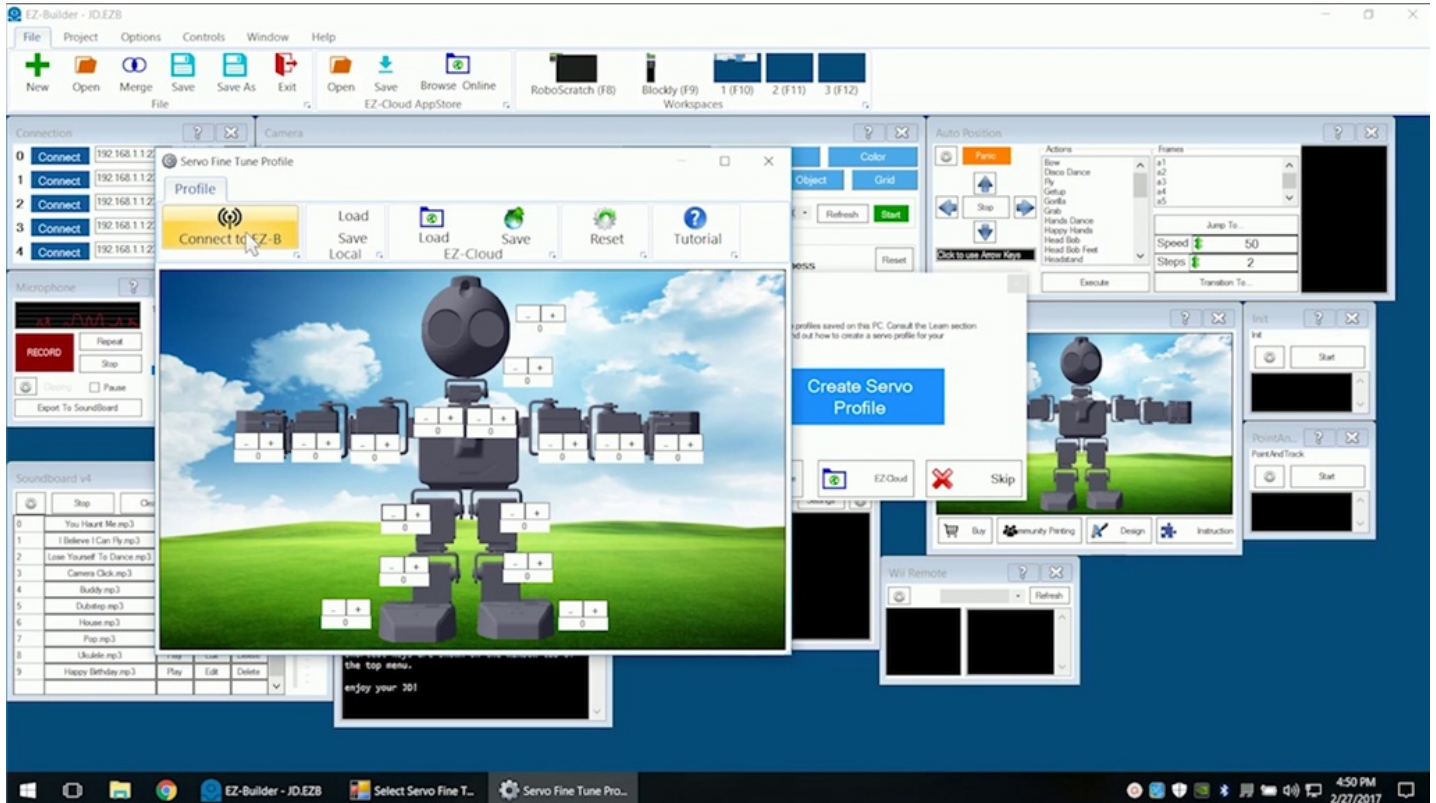
Step 4

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



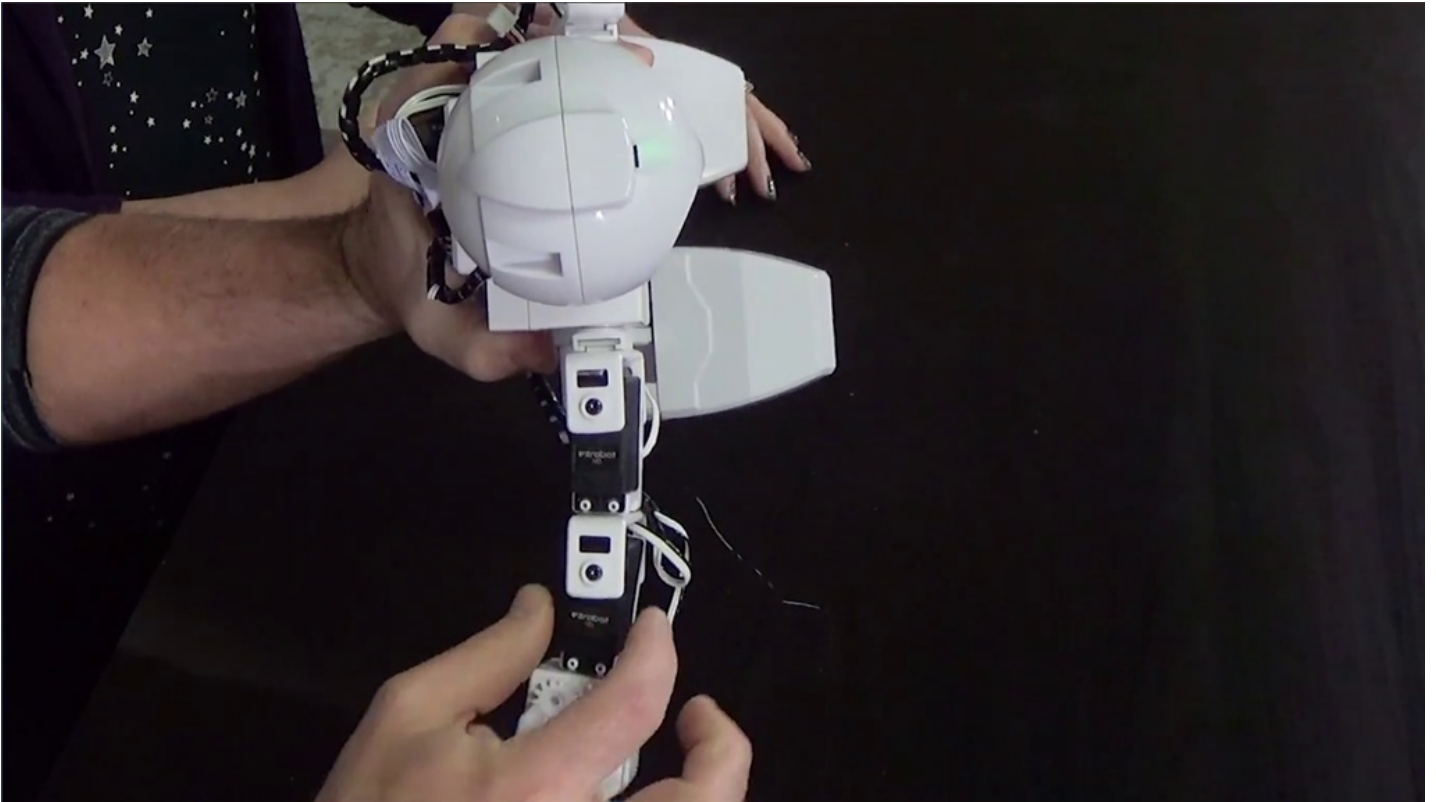
Step 5

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



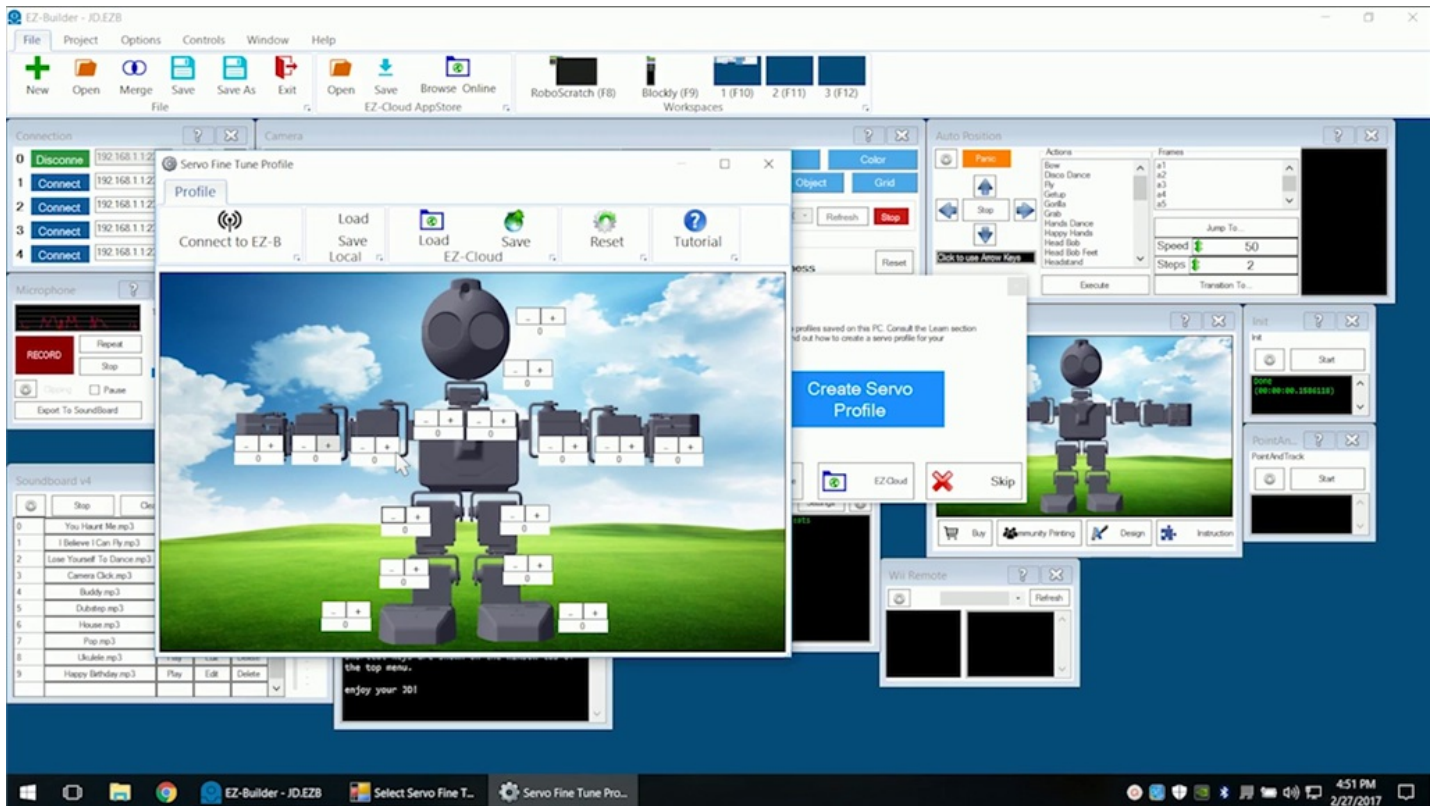
Step 6

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.



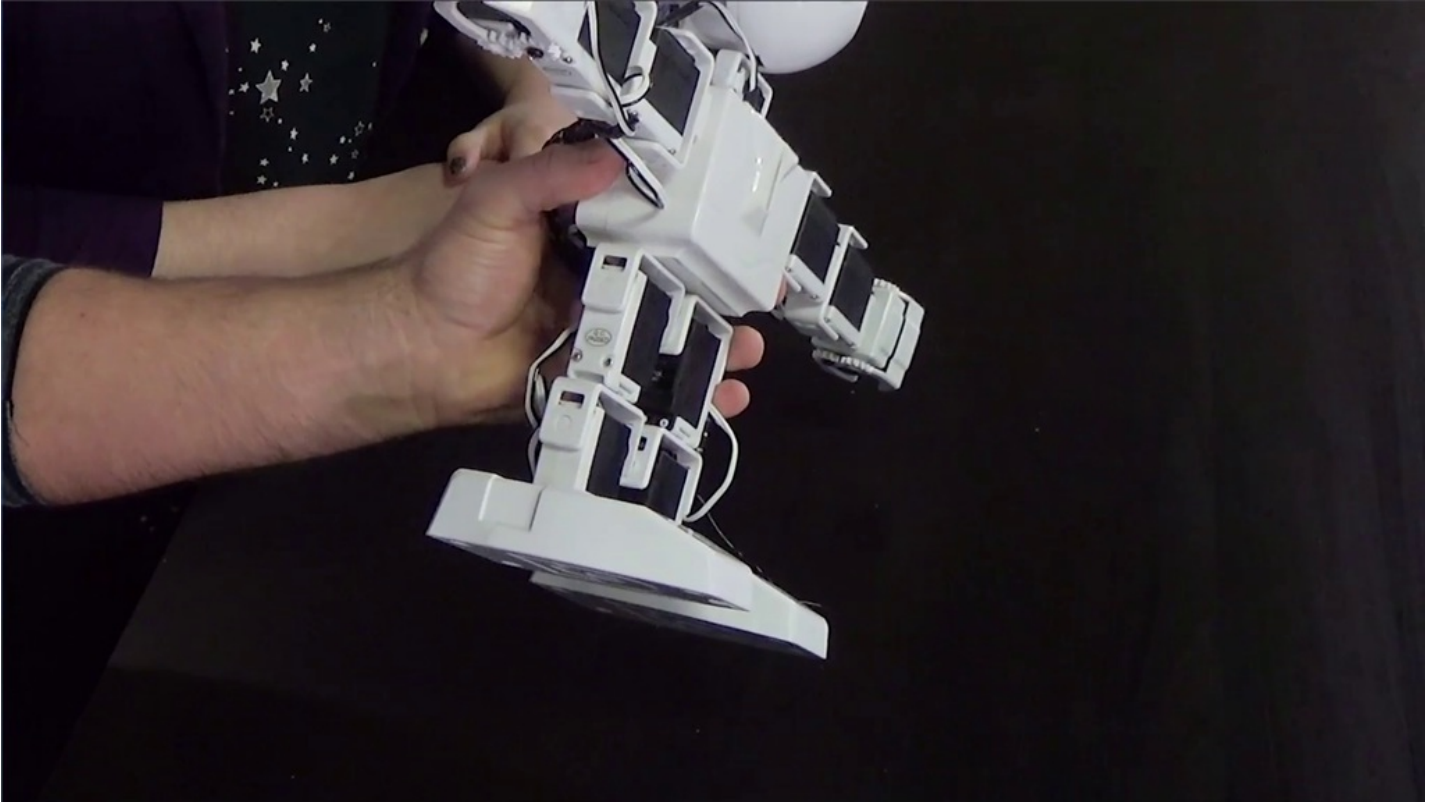
Step 8

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



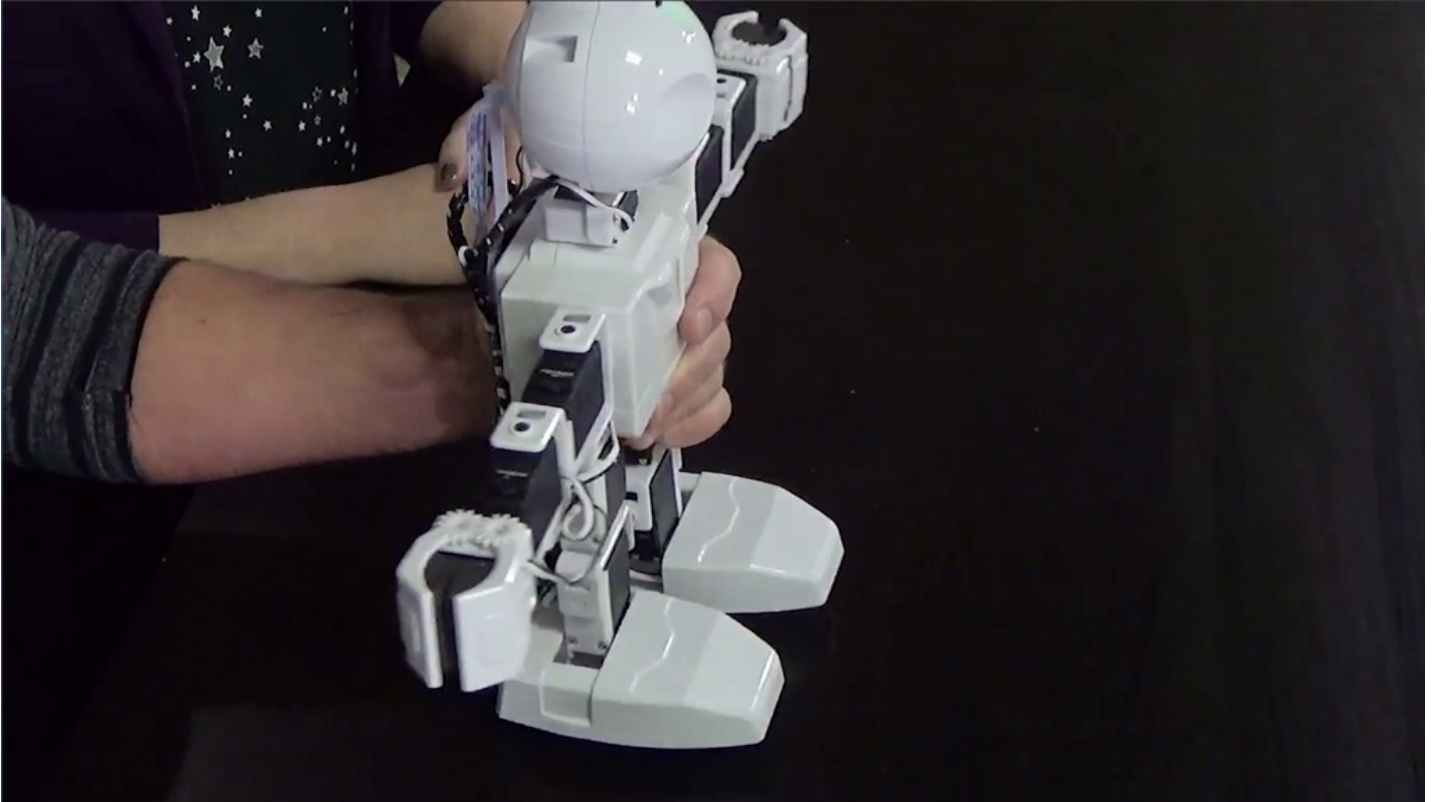
Step 9

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



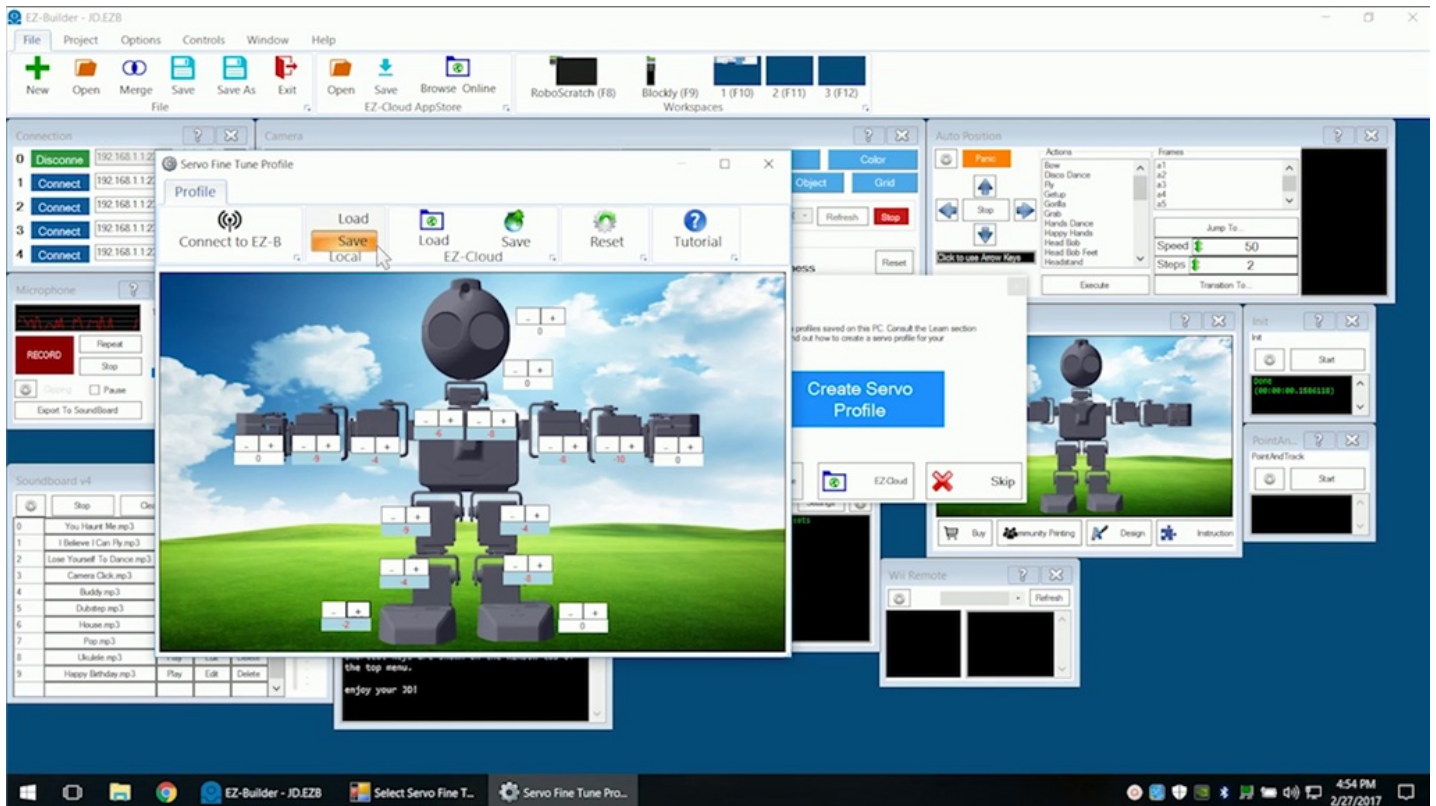
Step 10

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.

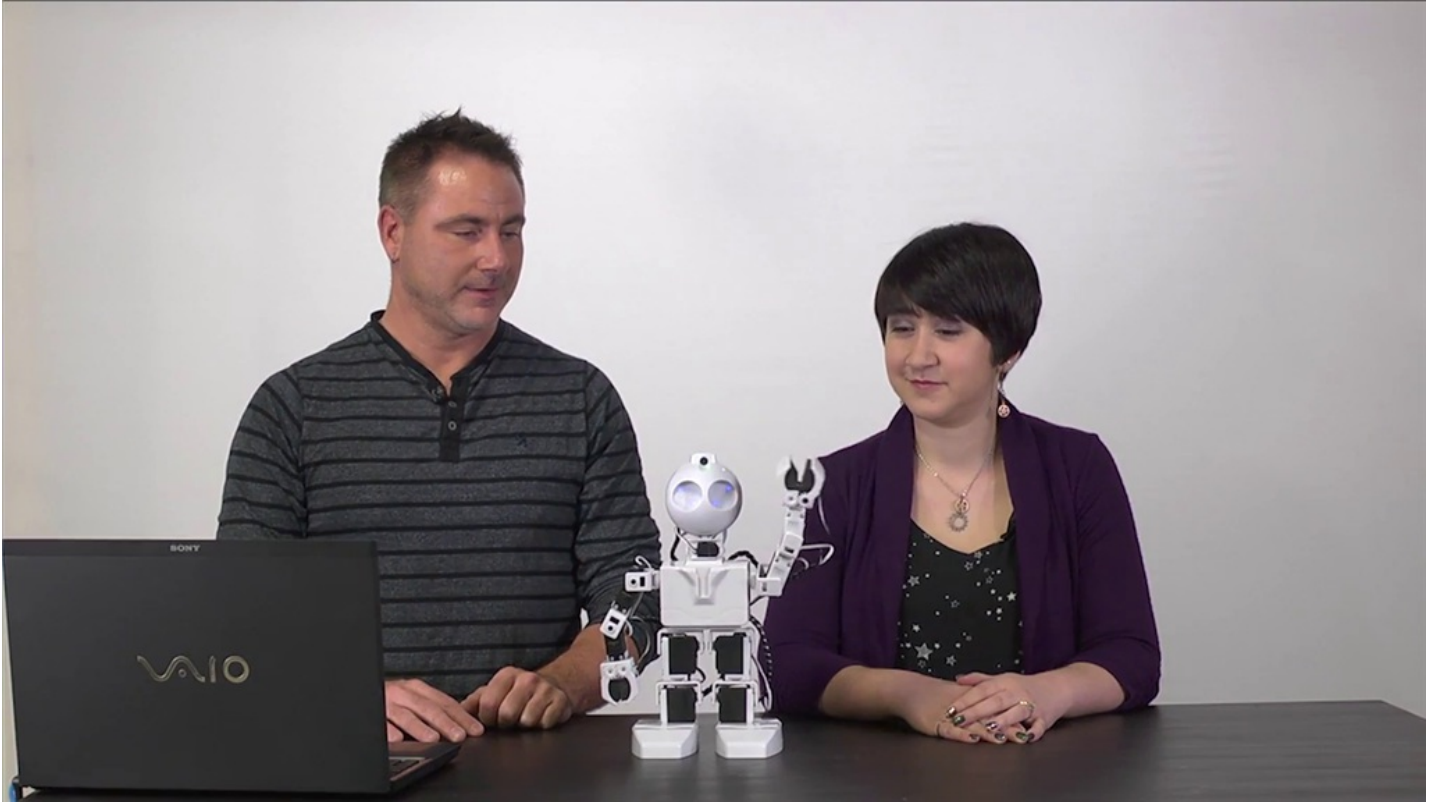
The screenshot displays the EZ-Builder software interface for a robot project. The main window is titled "EZ-Builder - JD.EZB" and features a menu bar (File, Project, Options, Controls, Window, Help) and a toolbar with icons for New, Open, Merge, Save, Save As, Exit, Open, Save, Browse Online, and EZ-Cloud AppStore. The interface is divided into several panels:

- Connection:** A list of four connection attempts, all showing "Connect" status and the IP address "192.168.1.123".
- Microphone:** A control panel with a "RECORD" button, "Repeat", "Stop", and "Pause" options, and a volume slider.
- Camera:** A live video feed of a person sitting at a desk with a robot on a tripod. Below the feed are sliders for "Image Brightness", "Image Contrast", and "Image Saturation", along with "Video Recording" and "Enhancements" (Sharpen Image) controls.
- Auto Position:** The central focus, showing a list of actions: "Turn", "St Down", "St Move", "Sturn", "Stand From St", "SunriseAut", "Turning", "Theme Mo", "Wave", "YMCA Dance", and "YMCA March". The "Wave" action is selected. Below the list are "Execute" and "Transition To" buttons.
- EZ-Robot:** A 3D model of a robot on a green field under a blue sky.
- RGB Animator:** A panel with a "Stop" button and a list of actions: "Banana", "Big Small", "Dog Scan", "Date", "Digits", "Expressions", "Flash", "Scanner", and "Spin".
- Soundboard v4:** A table with columns for "Step", "Clean", and "Using". It lists nine audio files with "Play", "Edit", and "Delete" buttons for each.
- Notepad:** A text area containing a welcome message and instructions for the "Revolution 3D" example project.
- Remote:** A small panel with a "Refresh" button.

The Windows taskbar at the bottom shows the system tray with the time "4:55 PM" and date "2/27/2017".

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.

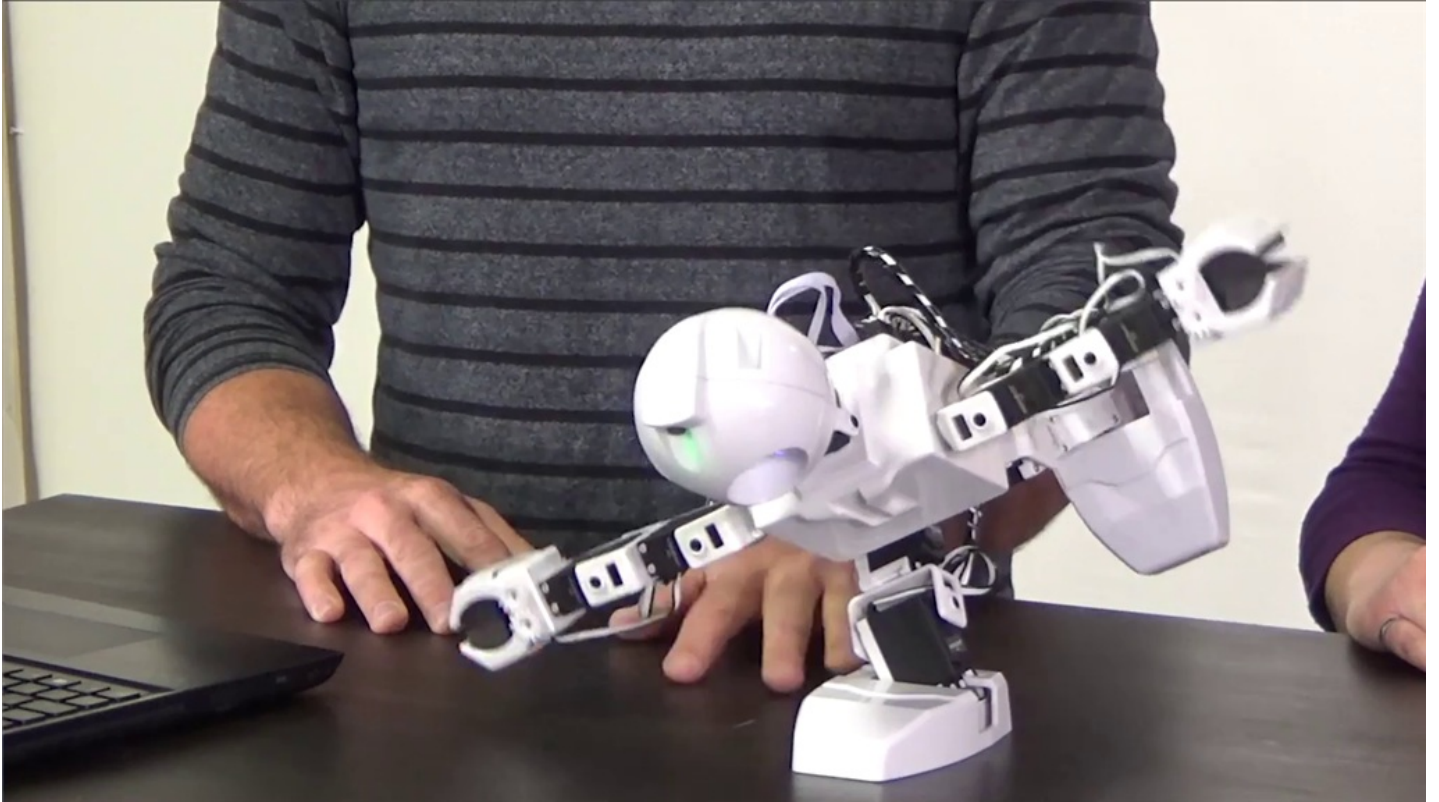
The screenshot displays the EZ-Builder software interface with the following components:

- Connection:** A list of four connection points, all labeled 'Connect' with IP address 192.168.1.123.
- Microphone:** A control panel with a 'RECORD' button, 'Repeat', 'Stop', and 'Pause' buttons, and an 'Export To Soundboard' button.
- Camera:** A central video feed showing a person in a blue shirt. Below the feed are sliders for 'Image Brightness', 'Image Contrast', and 'Image Saturation', and a 'Video Recording' section with 'Start' and 'Pause' buttons.
- Auto Position:** A panel with 'Up', 'Down', 'Left', and 'Right' buttons, a 'Speed' slider set to 50, and a 'Steps' slider set to 2.
- Soundboard v4:** A table of audio commands. The second row is selected, showing 'I Believe I Can Fly.mp3' with a 'Play' button highlighted.
- Notepad:** A text area containing a welcome message and instructions for the 3D example project.
- RGB Animator:** A panel with a 'Stop' button and a list of actions including 'Banana', 'Big Small', 'Dig Scan', 'Data', 'Expressions', 'Flash', 'Scanner', and 'Spin'.
- EZ-Robot:** A 3D model of a robot on a green field under a blue sky.
- Wii Remote:** A panel with a 'Refresh' button.

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

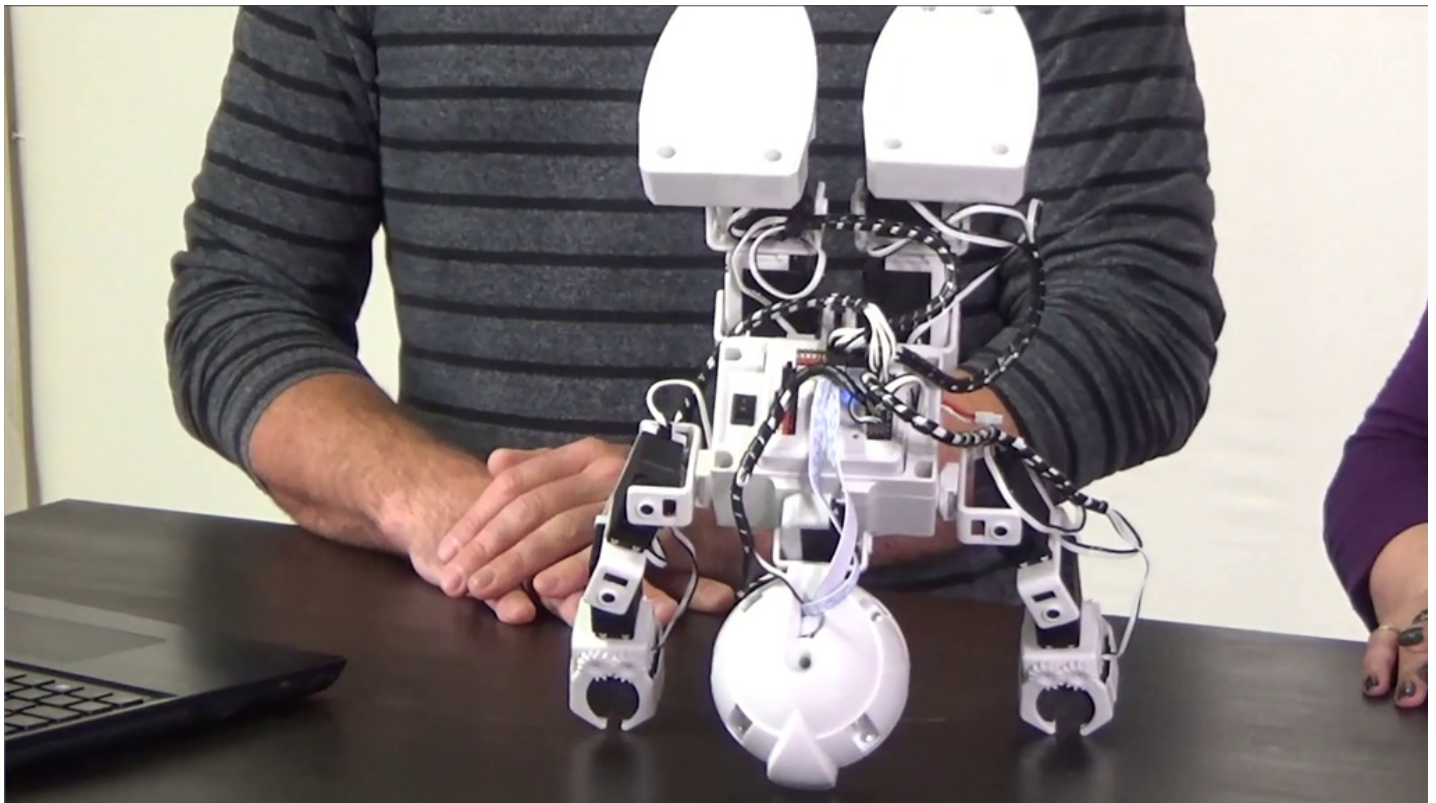
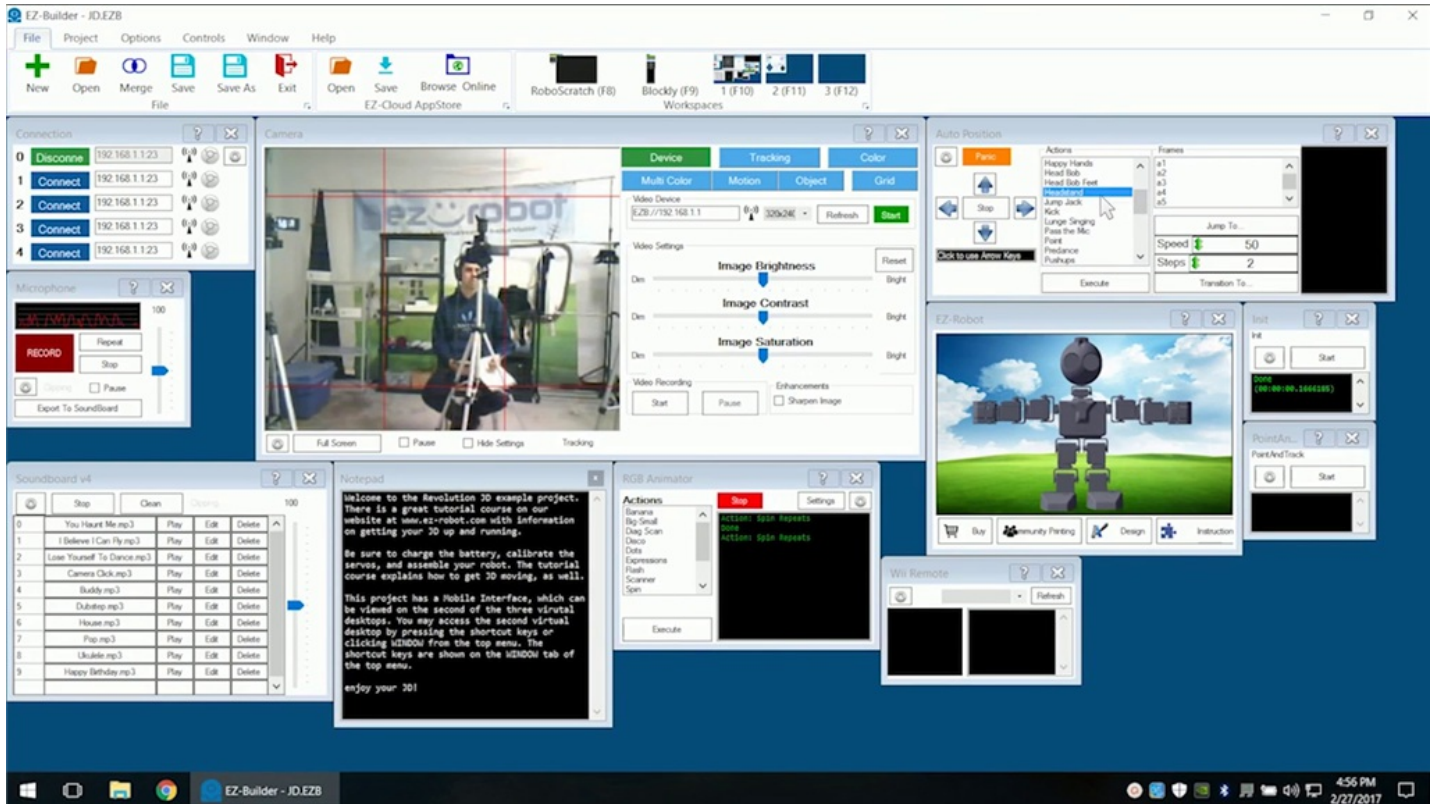
Step 15

Watch **JD** fly!



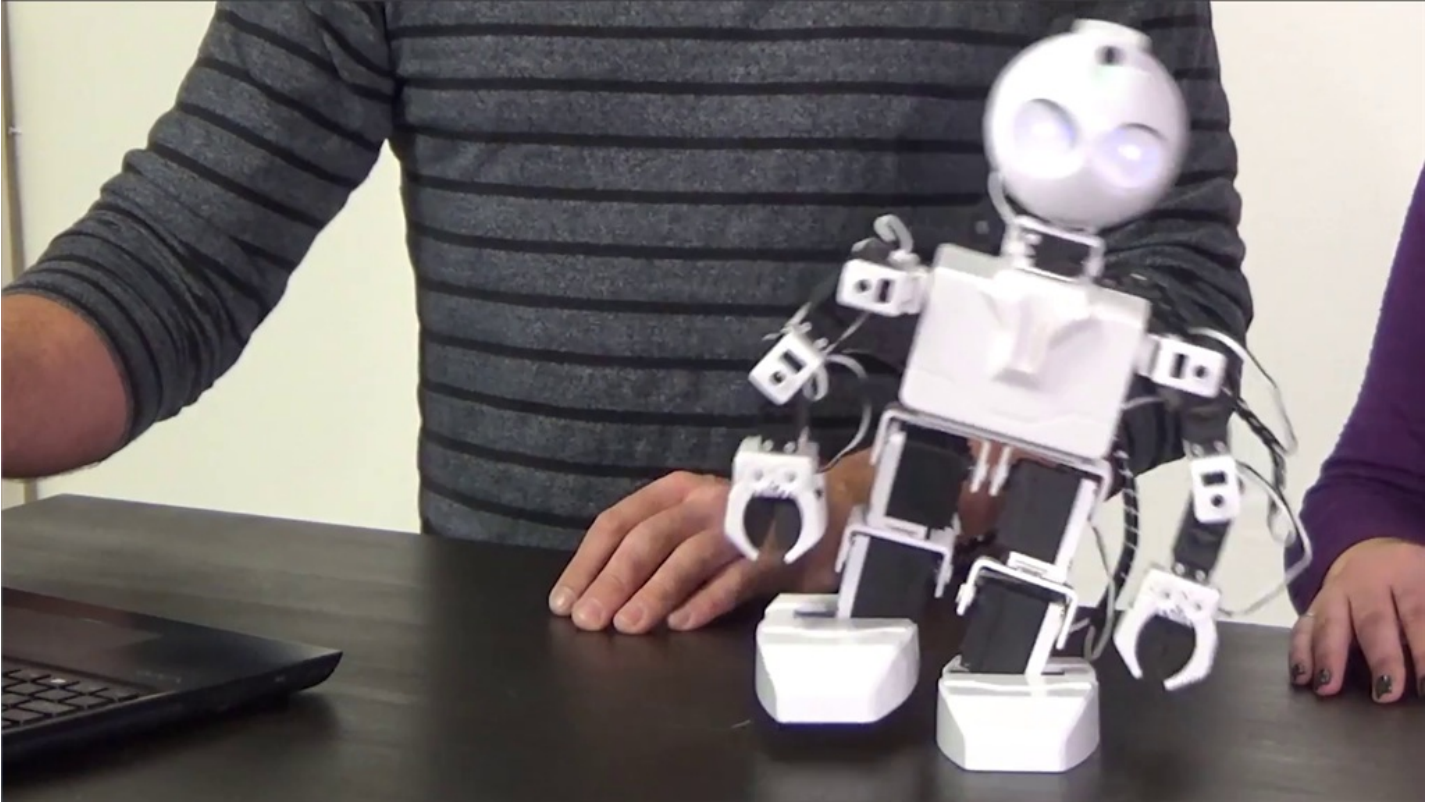
Step 16

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.



Quiz

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.