A Guide to Neuron AI

Introduction

Hi, everyone. You may have heard from various sources that "Neuron supports AI", but do you know what it stands for? Do you know how to use Neuron's AI? Are you curious about its applications in the real world? All the answers could be found here.

What is AI?

AI, is short for Artificial Intelligence. However, AI is a slippery term. At the early stage of computer development, people were inclined to reckon that a computer that can do complex mathematics and decode has a certain level of intelligence. However, Douglas Hofstadter, the author of *Godel, Escher, Bach: An Eternal Golden Braid* or *GEB*, once said, "I don't want to be involved in passing off some fancy program's behavior for intelligence when I know that it has nothing to do with intelligence. And I don't know why more people aren't that way." We expect AI to enable machines to think while we are still unaware of the nature of thinking. How does our thinking work? Can machines think the way we do? Can they think in a completely different way? Or back to the basics, what kind of behaviors could be taken as thinking?

Maybe just put those questions away. We are now exposed to a world where machine vision, speech recognition and recommender system are widely accepted as AI (they are fancy and complex programs) and the main drivers for the revival of AI. Thanks to these programs, AI is of immense commercial value. Machine vision could be applied to criminal tracking. For example, in China, any fugitive whose facial features information is in record would find it difficult to walk freely on the streets without being arrested. The Face ID adopted by Apple in their iPhoneX is now available. And speech recognition brings smart speaker and story teller industry with prosperity. Through tracking our online activities, the recommendation system works more efficiently to recommend products you might be interested in or videos you like.

How to use Neuron's AI?

Neuron builds its AI applications by using the Cognitive Services APIs provided by Microsoft. Neuron's Wifi modules make it easy to connect to Microsoft service and to use API to achieve speech recognition, age detection, emotion recognition and OCR. Microsoft is a highly globalized corporation so it's quite efficient in recognizing different languages, which makes it a perfect match for Makeblock, a company whose products reach out to all corners of the world.

The introduction of how to connect Neuron's WiFi modules to Microsoft Cognitive Services will be given in another guide. If you do not have or do not want to use WiFi modules, you can use the AI extension blocks explore more fun.

For a step-by-step guide, please visit: http://www.mblock.cc/doc/en/

Microsoft Cognitive Service is integrated into mBlock's sofware, enabling all Makeblock products to interact with AI.

Data gathering equipment is required as mBlock's AI extension blocks involve image and speech processing. Most computers have built-in cameras and microphones, which we could fully utilize. However,it is OK if there is no camera or microphone on your computer, since Neuron's camera and microphone/speaker modules are now available for purchase. Connect the Neuron parts to your computer via USB, then select the corresponding device in mBlock software to activate functions you need.

Sample Projects

Emotion recognition
Modules required: Button, LED screen, LED display, camera modules (if there is no equipped camera on your computer)

Instruction
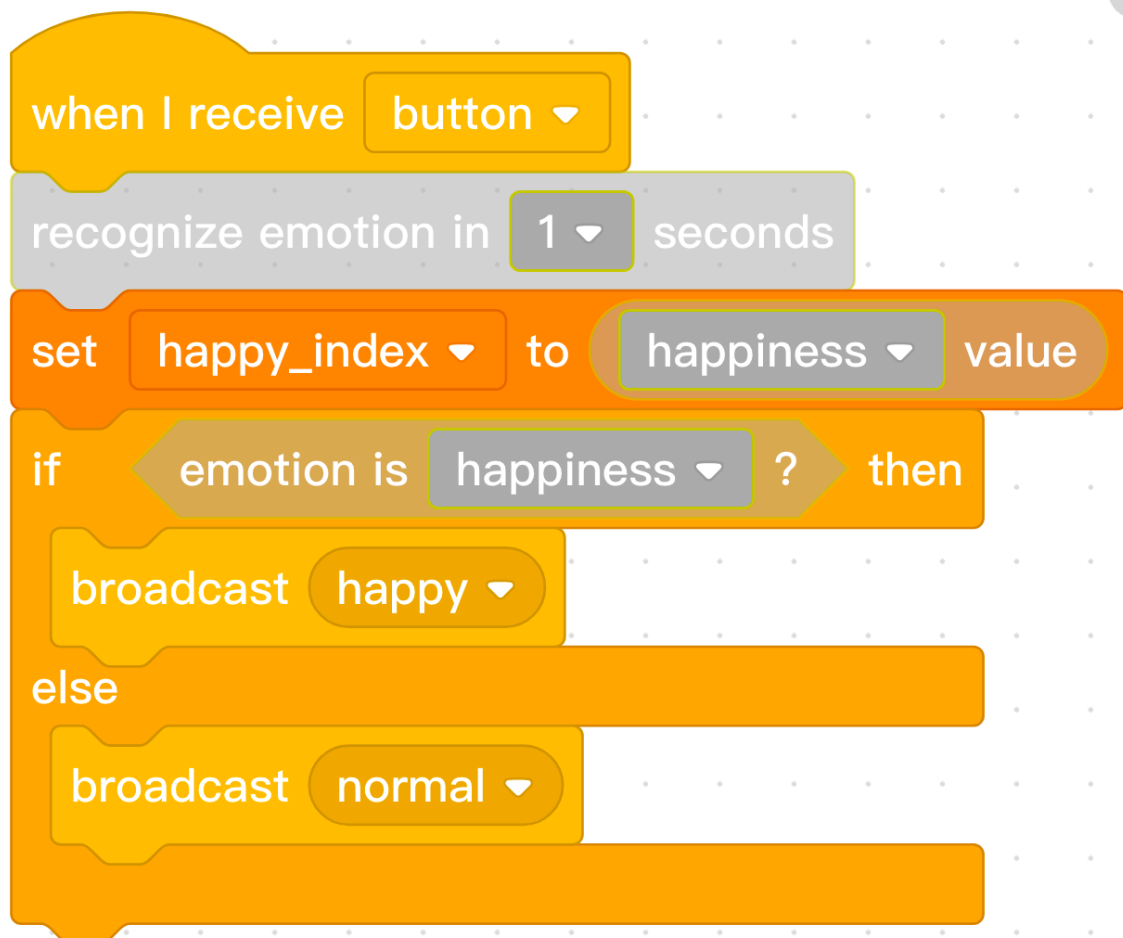
Function

Press the button to activate emotion recognition. Then our happiness level will be shown on the screen. Based on the feedback from Microsoft Cognitive Service, the LED panel will display a facial expression based on our emotions. Then we could have a robotic companion that can interact with us

Voice-control Password Box

Modules required: Button, LED screen, Servo, Servo driver, Speaker & Microphone modules (if you already are equipped with a speaker and a microphone, you may not need these modules)

Microsoft Cognitive Services enable us to set up a voice-control password box easily. First, press the button and say the default command, such as "Hi" (it works like Touch and Talk). If it matches the default setting, the servo will rotate certain degrees and the box will be opened. Otherwise "incorrect password" will be shown on screen.

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when I receive button ▼

recognize speech in Chinese ▼ for 2 ▼ seconds

set Password ▼ to speech recognition result

if  Password contains 你好 ?  then
    set IfPasswordRight ▼ to 1
else
    set IfPasswordRight ▼ to 0
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