Brainstorm IL

BrainstormTechnion Hack Nights 2021

Intro to EEG & OpenBCI workshop

Or Rabani

Getting started with OpenBCI hardware

1. Download openBCI GUI version 4.2 from their website.
   This version has the Focus Widget.
2. Connect your electrodes (1&2) to the board using this manual:
   If your board is white:
   https://docs.openbci.com/GettingStarted/Boards/CytonGS/
   If your board is blue:
   https://docs.openbci.com/GettingStarted/Boards/GanglionGS/
3. Use Gel and ribbon to connect the electrodes to your forehead
   follow this guide and the instruction I gave at the workshop
   https://docs.openbci.com/GettingStarted/Biosensing-Setups/EEGSetup/
4. In the GUI, open 4 window layout (top right), filter at 50HZ and BP1-50 (top left)
5. Open: raw signal, FFT, Networking and impedance widgets.
6. Disable channels 3 & 4 by clicking on the colored circle with the number
7. check for impedance using the impedance weight
8. replace Impedance widget with focus widget.
   https://docs.openbci.com/Software/OpenBCISoftware/GUIWidgets/
9. See if you can identify artifacts like eye blings, and muscle activity
10. Focus and have fun :)

Contact me at or.rabani at gmail.com

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Getting started with OpenBCI GUI

1. Download openBCI GUI version 4.2 from their website.
   This version has the Focus Widget.
2. Download and install the latest Arduino IDE
   https://www.arduino.cc/en/software
3. Download the *.ino file from step 4 in this tutorial
   https://www.instructables.com/Send-Focus-Data-From-OpenBCI-GUI-to-Arduino/
4. Connect the Arduino and upload the file (“sketch”) to the board using Arduino IDE and this manual:
   https://www.arduino.cc/en/Tutorial/getting-started-with-ide-v2/ide-v2-uploading-a-sketch
5. Connect an LED to pin 13 (long leg) and the GND pin next to it (short leg)
6. Load Or’s brain from here:
   https://drive.google.com/file/d/1Om3J8KliprQp6pGm9EV0b5Uxa_1bhD8M/view?usp=sharing
   In the GUI: choose load from file, 4 channels.
   Use this manual to get to know the GUI
   https://docs.openbci.com/Software/OpenBCISoftware/GUIDocs/
7. In the GUI, open 4 window layout (top right), filter at 50HZ and BP1-50 (top left)
8. Disable channels 3 & 4 by clicking on the colored circle with the number
9. Open: raw signal, FFT, Networking and focus widgets.
   More about the focus widget:
   https://docs.openbci.com/Software/OpenBCISoftware/GUIWidgets/
10. connect between Arduino and OpenBCI using steps 6-7 in this manual
    https://www.instructables.com/Send-Focus-Data-From-OpenBCI-GUI-to-Arduino/
    See if you can identify when I am blinking, moving or focusing :)

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