Using EEG to Enable Locked-in Patients to Communicate

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This project aimed at designing an efficient and affordable device to give a chance for locked-in patients who are voiceless and paralyzed in order to communicate with other people. A Mindflex EEG headset was utilized to detect brainwaves transmitted by user. The brainwaves were then sent to an Arduino microcontroller which receives EEG transmits and converts them to digital data. Beta waves amplitude was coded using a Visual Basic program. By the concentration and meditation of his/her mind, the user was able to control the amplitude of beta waves. Thus producing high and low values which were thereafter converted to binary codes to compose different words, both written and spoken.

Awards Won: