Motor observation-based brain-computer interface for upper limb rehabilitation

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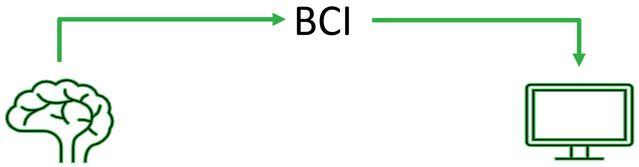
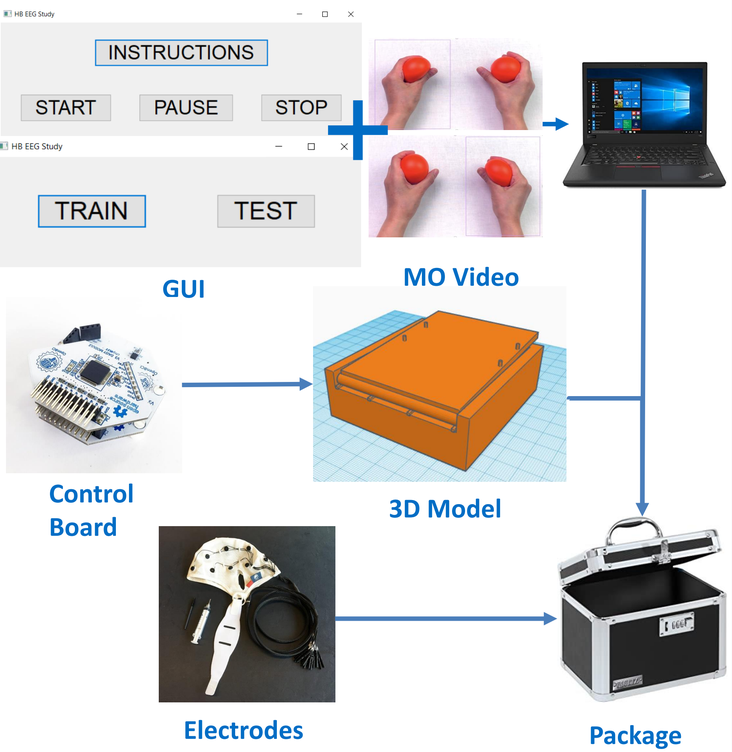
Purpose



- BCIs currently rely mainly on motor imagery (MI)
- It is unclear when children develop the ability to imagine motions
- Can we use motor observation (MO) to visually stimulate the same systems and recognize these patterns through a BCI?

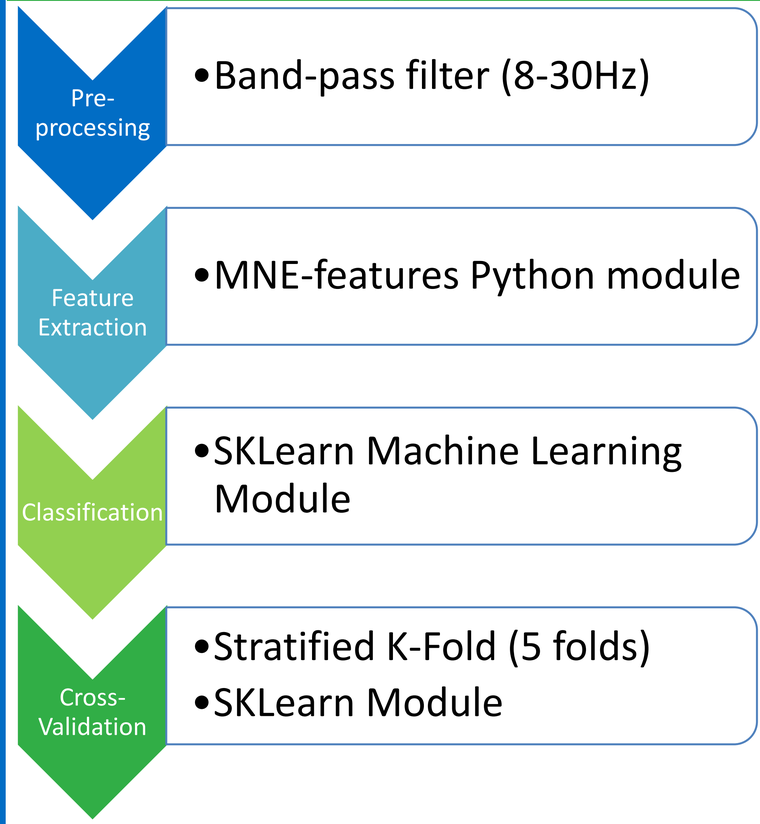
Protocol

- Package to send to 5 participants:



Motor observation brain-computer interface paradigms may open new corridors for movement rehabilitation

Analysis



Conclusion

- Analysis was conducted on data obtained from instrumentation testing and results showed applicability to future research data
- Performance 10% higher than expected with chance indicates MO provides accurate hand movement identification paradigm
- Further analysis will be conducted once data is collected from participants using experimental protocol

Relevance

- Replacing MI with MO in BCIs could lead to the development of motor rehabilitation BCI paradigms
- Long term research could enable motor execution for children with stroke, spinal cord injury, and other motor impairments