

This should be written
as an Experiment Method
Chapter.

1. Aims
2. Participants
3. Equipment
4. Procedure / ethics
5. Data preparation

each section should have
detail to allow the
experiment to be
replicated.

I would expect this
Chapter to be 10 pages
long (at least)

Chapter 5

Time-series Dataset

For this thesis, twenty-three participants, from now on defined as pN where N is the number of participant, were invited for an experiment of arm movements which will be explained in detail in Chapter 6 and 7. Data for twenty participants were analysed in this thesis, since the instructions for $p01$, who was the only left-handed, were mistakenly given in a way that movements were performed different from what had been planned, and for participants $p13$ and $p16$ data were corrupted because bluetooth communications problems with the sensors. With that in mind, ~~Of the twenty participants,~~ ^{20 participants} all of them ~~were~~ ^{are} right-handed healthy participants and four are females and sixteen are males with a mean and standard deviation (SD) age of mean=19.8 (SD=1.39) years.

During the experiment, participants wore two neMEMSi Inertial Measurement Units (IMU) sensors in their right hand. Then, each participant was asked to perform ten repetitions of simple horizontal and vertical arm movements described in the following sections. We refer the reader to Appendix B for technical information about the IMU sensors.

5.1 Arm movements following an image while not hearing a beat

Participants received instructions to perform the following upper arm movements while only looking an image of the movement.

- ten repetitions of horizontal arm movement at their comfortable speed of each participant,
- ten repetitions of vertical arm movement at their comfortable speed of each participant,
- ten repetitions of horizontal arm movement at a faster speed than the comfortable speed but not at their fastest speed and
- ten repetitions of vertical arm movement at a faster speed than the comfortable speed but not at their fastest speed.

5.2 Arm movements following an image while hearing a beat

Participants received instructions to perform the following upper arm movements while only listening a beat to constraint their movements.

- ten repetitions of horizontal arm movement at normal speed,
- ten repetitions of vertical arm movement at normal speed,
- ten repetitions of horizontal arm movement at faster speed and
- ten repetitions of vertical arm movement at faster speed

5.3 Arm movements following a humanoid robot while hearing beat rate

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Participants received instructions to perform the following upper arm movements while imitating upper arm movements of a humanoid robot.

- ten repetitions of horizontal arm movement at normal speed,
- ten repetitions of vertical arm movement at normal speed,
- ten repetitions of horizontal arm movement at faster speed and
- ten repetitions of vertical arm movement at faster speed.

Each of these could be illustrated with the images from your instructions

Ethics - you should say that the design of the experiment adhered to UoB regulations. Data were anonymised and stored only on your computer. Participants provided informed consent and were free to withdraw from the study.