Call for Master Thesis at the Institute for Transport Studies

Working Title

Validating the sensors and biometric interactions: virtual environment vs real life experiments

Starting Situation / Framework Conditions

With the rise of digitalisation and connected life style, Virtual Reality has been deemed as the new (living) environment where one could do multiple activities as if he/she is executing it in a real world. An example of this is the development of meta-verse, by different leading IT companies. Such virtual-living concept also has open huge plausibility in scientific research, in particular when one wish to explore the plausible impacts of one's action in response on the changes in his/her environment.

Now, whilst there have been a number of experimental environment and digital twin have been developed in different cities and living labs, it is not yet confirmed whether the behaviours and reactions that have been observed and captured by sensors are a valid reflection of one's behaviours in his/her daily life. This is the focus of this thesis topic.

This thesis focuses on validating the readings by biometric sensors attached to an e-scooter's user whilst travelling on some select streets in Vienna and also within select virtual reality environments.

In this thesis, the student will have an opportunity to utilize a number of biometric measurements and experience travelling in virtual environment and collect and analyse own data. To execute such analysis, data analytical skills and an understanding of basic statistical analysis are required.

Aim of the Master Thesis

- This thesis aims to understand the robustness of new type data collections in measuring travellers' pysio-psychological conditions both in real time and in virtual reality environment.

Methods

- In this thesis, a primary data collection of own travel experience to different parts of the cities, with an e-scooter, over one month, will be arranged.
- Based on the personal experience, and owned collected data, then the readings are compared with own real-life perceptions, sensors' inputs and readings from Virtual Experiment trials.
- Analyse the differences/similarities between own subjective data with own biometric data
- Withdraw conclusion and develop recommendation on the validity of virtual environment in replicating real-life behaviours.

Co-operations

- Depending of the individual choice of the research questions and the quality of the work, a presentation may be possible to an audience of experts and practitioners in the mobility sector, including DAVeMoS' partners e.g. Stadt Wien.

Contact at the Institute for Transport Studies

- *Yusak Susilo (yusak.susilo@boku.ac.at)*
- *Martyna Bogacz (martyna.bogacz@boku.ac.at)*
- *Shun Su (shun.su@boku.ac.at)*

Notice

Language: English