



POSITION TRACKING AGAINST DAYLIGHT LEVELS

July 26, 2020
14:00-18:00

MAPPING OCCUPATION AND MOVEMENT THROUGH LOW-COST CAMERAS

In the context of the performance of the built environment, understanding and quantifying human behaviour in a defined indoor/outdoor space can be a powerful tool. By doing so, the researchers can understand whether human behaviour matches the design expectations, and the points where they do not match might present valuable insight as to what people actually prefer, and how we can use this feedback in our design and operation processes.

In order to do so, several observation methodologies have been tried over the years – in the early years as taking notes manually through on-site observation, long-term video recording and manual deciphering, and more recently tracking people via their digital presence, (i.e. via their Bluetooth or Wi-Fi connections), or using digital counting technologies (i.e. RFID or NFC beacons), or GPS technologies for outdoors and localising sensors for indoors.

However, each of these systems have their limitations, and while certain ones may offer high precision, they are not scalable and still require expensive infrastructure and/or labour to prepare the data.

An emerging method that promises to overcome the mentioned setbacks is occupation mapping through videos using real-time computer vision algorithms. This IDP project calls for students who are interested in developing such an algorithm to create real-live occupancy maps of indoor and/or outdoor spaces, using low-cost cameras.

The prototype has to be capable of tracking individuals through multiple camera perspectives in real-time, making it scalable for larger areas. The tracked information will then be stored and visualised on top of a map and used in analyses scenarios.

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