Unit Code	SWE40001	Unit Total	39

Project Category **Software Development**

Project Title **Visualisation of urban mobility related wheelchair data**

Brief description

In the future, wheelchairs will be equipped with sensors that provide a multitude of data, not just related to the wheelchair user, but even more so to the urban mobility. This serves for gauging how the environment is adapted to the user's needs, related to the properties of the ground, accessibility of public transports, etc. The sensor data provided by a smart wheelchair prototype are: time stamp, angular velocity (= speed of the chair), translational acceleration (roughness of the ground), and GPS data.

The GPS data have to be visualised on Google maps, as the path of the wheelchair, whereby the other parameters are colour coded and superimposed on the path. E.g., the changing hues of the path are related to 1) the speed of the user, 2) the roughness of the ground, 3) zero-activity (indicating e.g. waiting time at traffic lights or riding on a bus [identifiable from the speed differential between chair and GPS]), 4) wheelchair stoke pattern and possible fatigue of the user. In the long run, a database will be established for processing the map data, and deriving useful data that help wheelchair users as well as town planners to improve the accessibility of urban life.

The aim of this project is to: Study will explore the publicly available sensor data sources. Develop an approach for urban mobility from sensor data. Implement and demonstrate the visualizer Project Background Student in this project will have the opportunity to work closely with industry partners and senior scientists

Project Specialisation Web development and design. Database knowledge are essential. Python, Java, Java Script, AngularJS, PHP, Bootstrap, HTML5, MySQL

Project Skill Software Programming

Project Environment Python, Java, CCS3, D3, Java Script, HTML, SQL and Windows

Research This is part of research work ongoing research.

Group size 5