Visualisation of pedestrian activity in the city of Melbourne

Chafin Abdou*
Claude Bernard University - Lyon 1

Essohanam Kouyou†
Claude Bernard University - Lyon 1

Quentin Sorel‡
Claude Bernard University - Lyon 1

1 INTRODUCTION

In a world where sustainable development assumes an ever more pertinent position in the global imaginary, walking, travel by foot, has become revered as a viable alternative to the use of automobiles. More than a mere mode of transport, walking has revealed itself to be a veritable vector of life and major contributor to urban dynamism; for the past 10 years pedestrians have been implicated at the very heart of urban practices. It is therefore logical to ascertain that numerous issues linked to urbanism and security in relation to the pedestrian body have appeared. In order to respond to this issue, it seems first crucial to study the behavior of pedestrians at the heart of the urban landscape.

With the aim to better understand pedestrian activity, the city of Melbourne has put into place an automatic system designed to count and record pedestrian numbers. In order to achieve this, pedestrian counting devices have been placed at certain populous locations within the city. The number of counting devices present in the city has risen from 18 in May 2009 to 40 at present. These pedestrian counting devices collect information which permits the temporal and spatial examination of pedestrian habits. The information collected is used by the city notably in the imposition of certain commercial strategies as well as in urban planning. We intend to utilize this data in order to create a visualization of pedestrian activity in Melbourne. In order to create such a visualization, we equally intend to use meteorological data as well as data pertaining to events occuring at specific locations, in order to explicate the correlation between the number of citizens at each location and the external factors influencing their presence there.

The final visualization must therefore provide a clear and adequate representation of the data studied; we thus intend to investigate different means through which to present the data. Our project will investigate numerous visual tools including maps, which will be further explicated with advanced and personal ocular techniques in order to obtain an efficient and demonstrative visualization of the data studied.

2 INSPIRATION

The city of Melbourne offers to visualize the data that we study in free access, a map visualization realized by **OOMCreative** (*figure 1*) is indeed available. It presents a global visualization of pedestrian activity by describing hour by hour the number of individuals detected at the locations where the sensors are placed. It also compares the current inflow with an average of the inflows collected on the same day at the same time. Thus the visualisation gives a detailed graphical representation of the information collected in relation to historical trends (*figure 2*).

It is this work that will serve as a basis for our project. Simple to manipulate and understand, this visualization only provides a simple approach to describing data. Our job will be to flesh out this work, to make it more comprehensive, highlighting other statistics. We will also consider external factors, such as weather or the holding of events in certain parts of the city and at a specific time, that will explain the values of some of our data. Our visualization should therefore be able

*e-mail: chafin.abdou@gmail.com
†e-mail: essokouyou@gmail.com
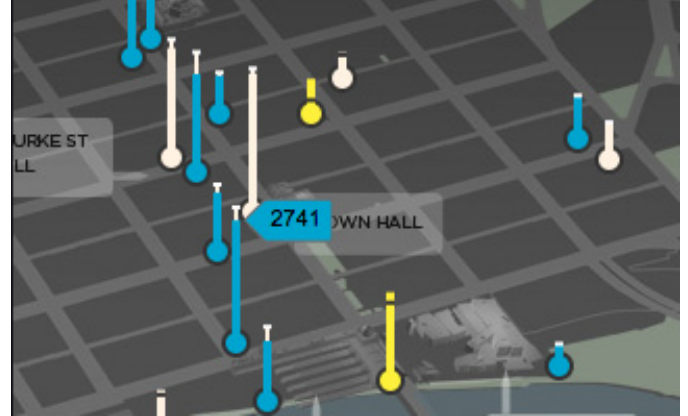‡e-mail: quentinsorel@outlook.com

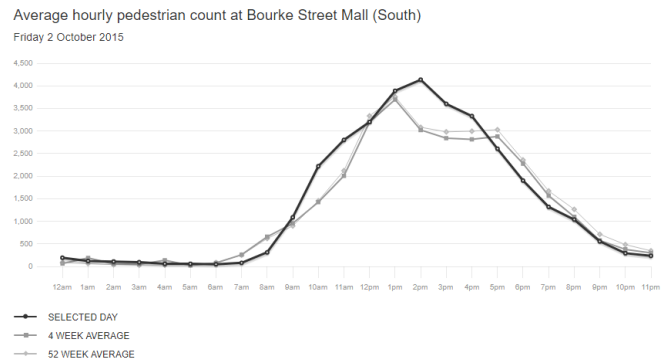Fig. 1. Pedestrian activity visualisation in Melbourne by OOMCreation

Fig. 2. Comparison of counts from a specific day to a 4 weeks average and a one year average

to represent and reveal the possible correlations between this type of data and our initial dataset counting the number of people.

3 FIRST IDEAS

3.1 Meteorological data

Des donnes que l'on pourrait utiliser pour agrmenter le modle initial sont des donnes mtorologiques. Les pitons sont totalement soumis au climat. Ajouter dans la visualisation la mto permettrait de bien visualiser le consquences qu'a le mauvais temps sur l'activit pitonne.

Pour visualiser ces donnes mtorologiques, nous avons eu l'ide de les reprsenter au niveau du fond de la carte. A la manire dont les donnes mtorologiqes peuvent ltre reprsenter sur le widget Weather disponible sur Android (*figure 3*).

4 CONCLUSION

REFERENCES

Fig. 3. Weather widget display