

Turning Raw SenseCam Accelerometer Data into Meaningful User Activities

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Accelerometer

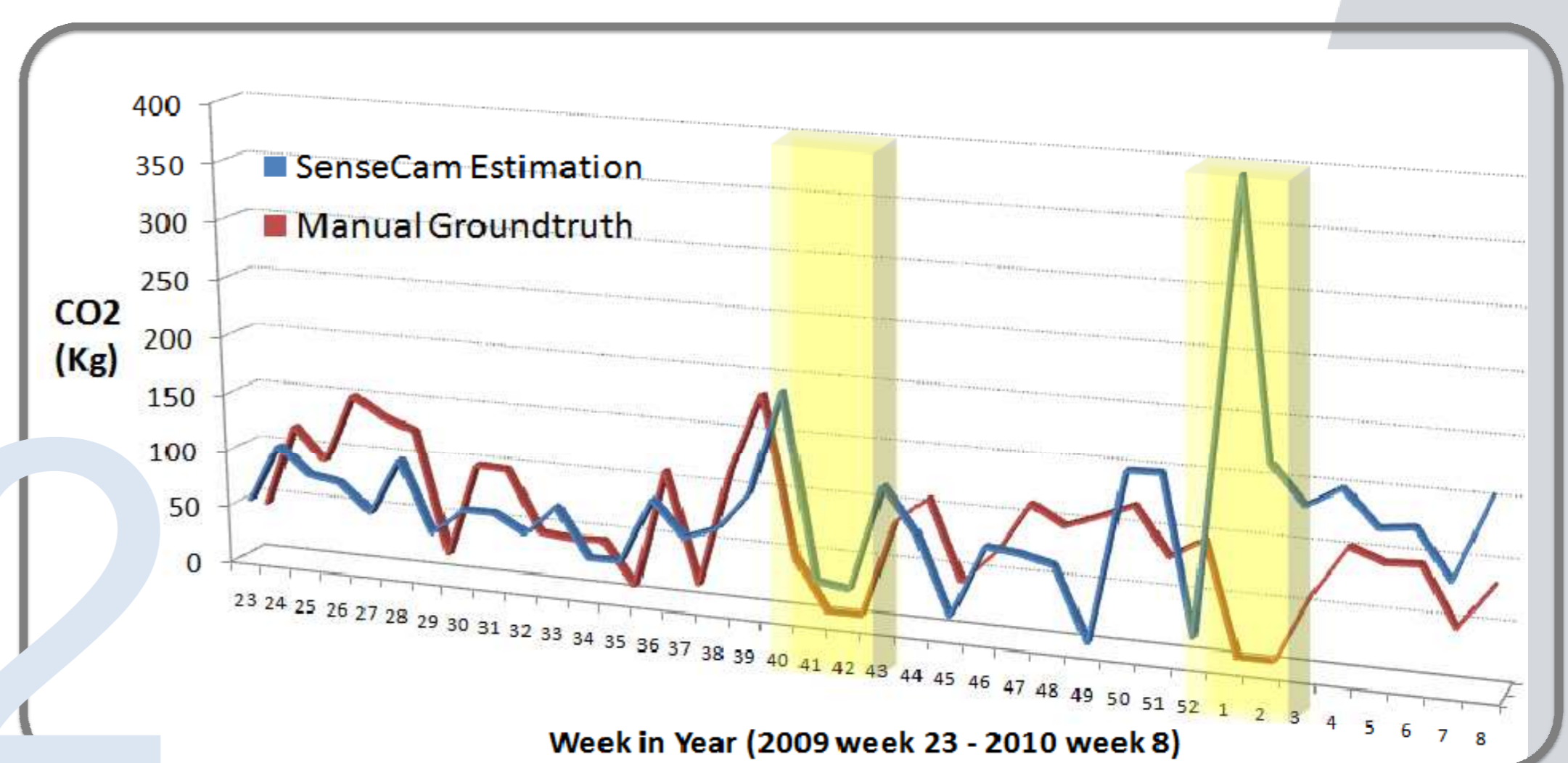
Traditionally influences photo capture by choosing the optional time to take pictures.

- Acceleration data is easily stored and processed.
- No wireless signals are needed.
- Low battery consumption.
- Important source of evidence for automated content annotation.

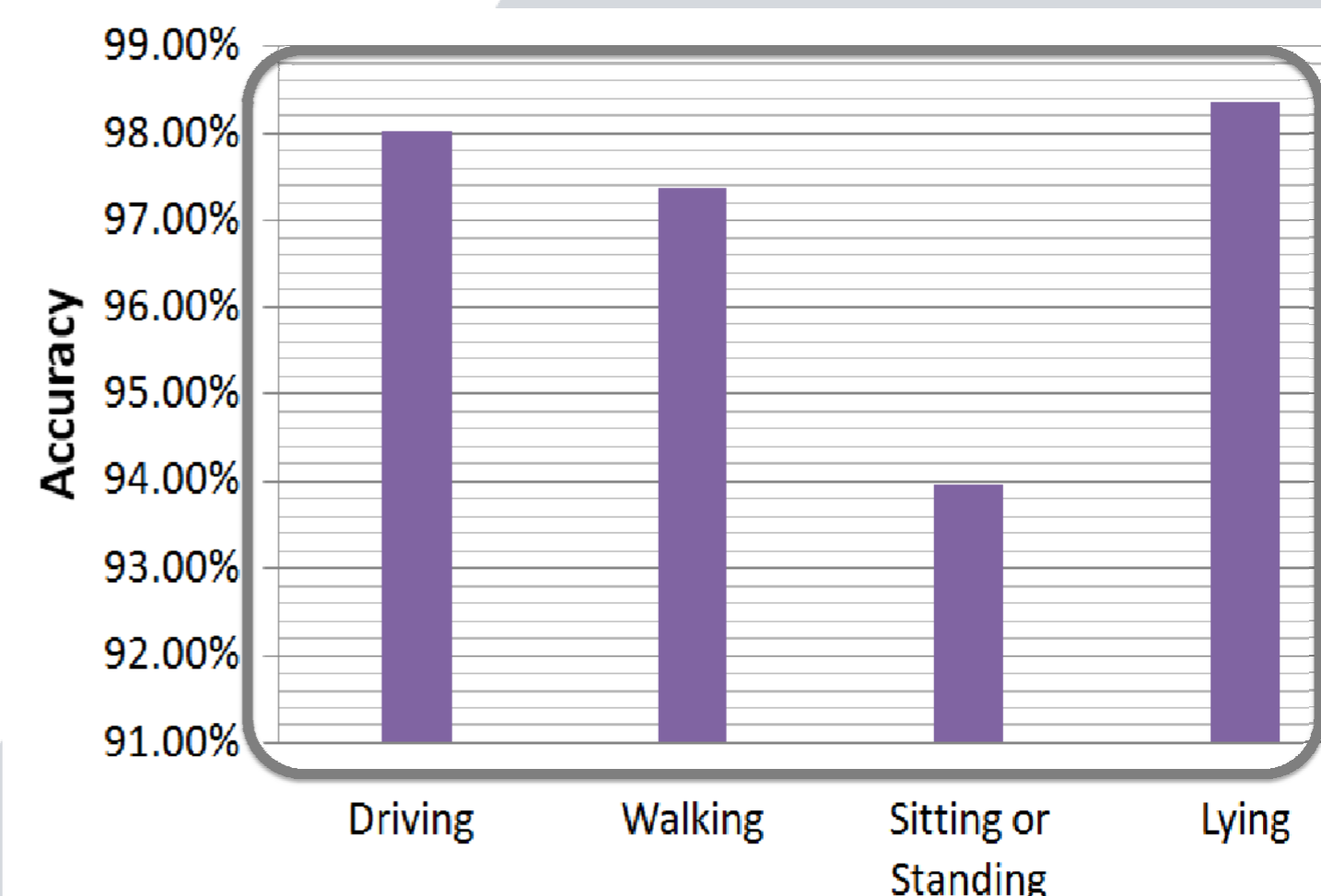
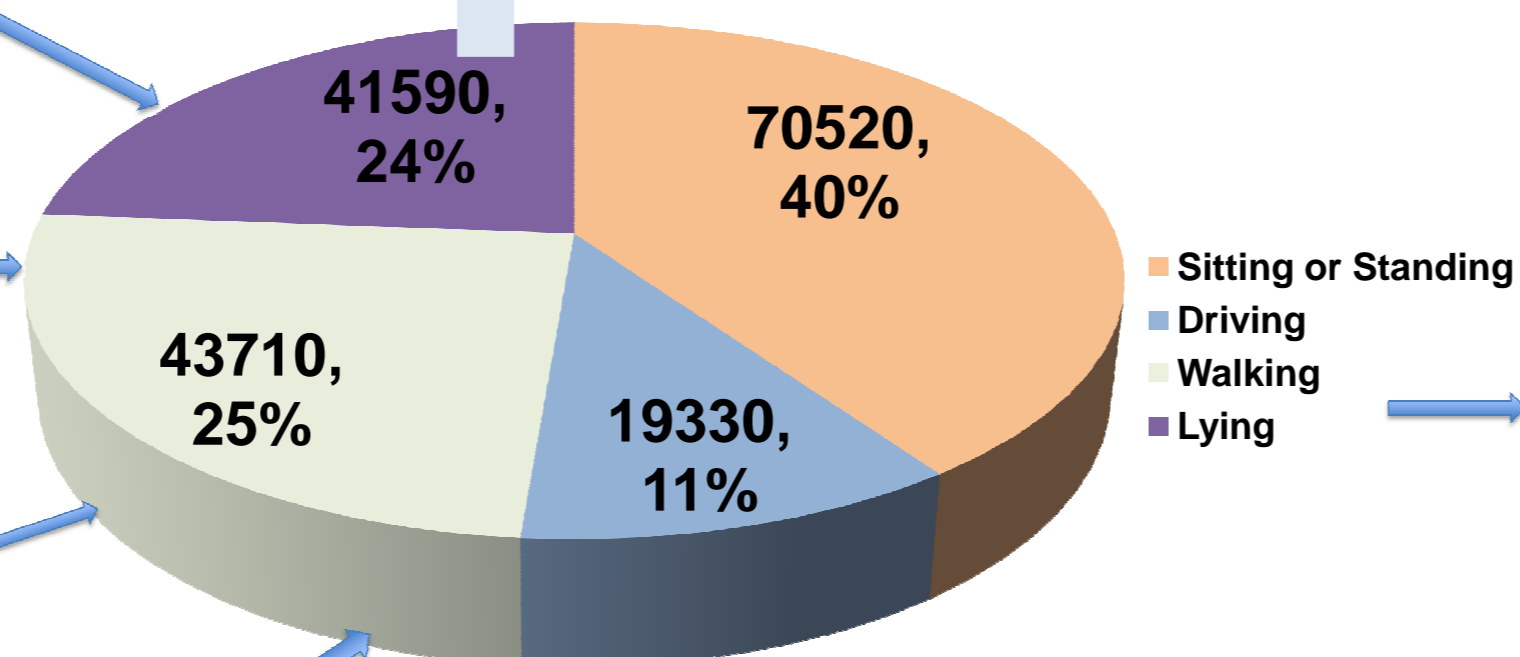
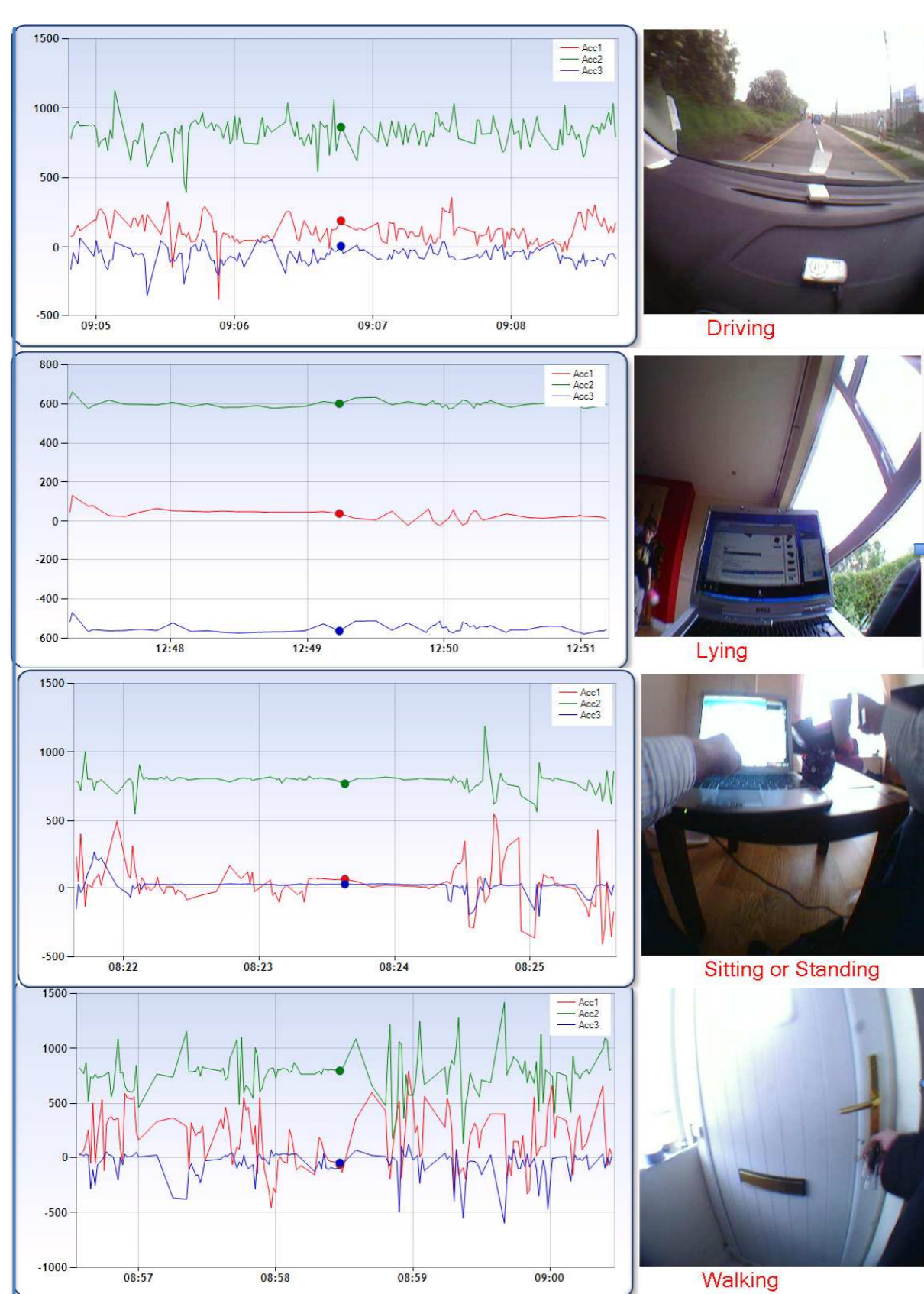
Activities detection and Calculating driving-related CO₂ can be done by analysing this raw acceleration data.

Calculate driving-related CO₂

- We identify CO₂ emitting activities such as driving and flying
- Built SVM classifiers to identify driving related activity
- Detection improved by smoothing algorithms and also techniques to detect time spent at traffic lights.



Activities detection



• Common daily activities can be recognised, such like sitting, walking, driving and lying.

• We employ different binary-class SVM models for each activity, where different features from acceleration are used to recognise different activities.

• Results can be used as an important resource for associating context with real-time lifelog information.

Future Work

There are a number of future work opportunities that we are addressing:

- Find new activities from the acceleration data. Such as running can be recognised from walking by its acceleration range and duration.
- Adopt smoothing algorithms to improve accuracy. Because of the stop-start nature of every activity is different.
- Find and improve events and activities detection accuracy by combining acceleration data and other data, such as image, light, environment temperature.

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