

Counting People Using a PIR Sensor

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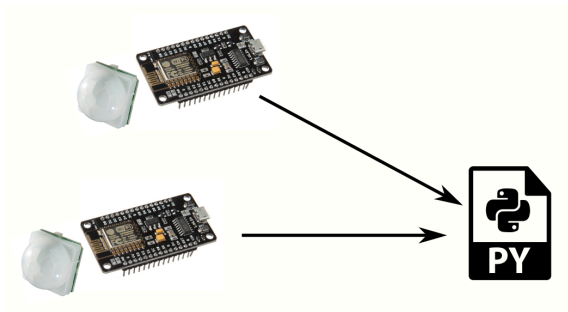
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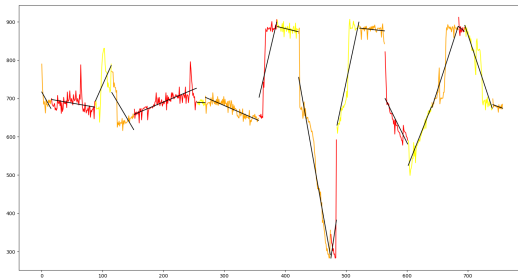
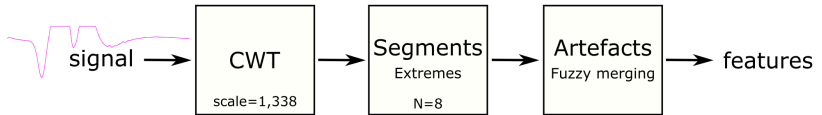


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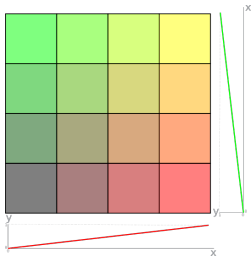
- Study the topic.
- Design a theoretical system, that could:
 - Localize a person.
 - Estimate a count of people.
- Implement and test the approach.
- Summarize.

- Sensor device (PIR STD, NodeMCU)
 - Sampling
- Classification server (Python, NumPy)
 - Classification
 - Fusion

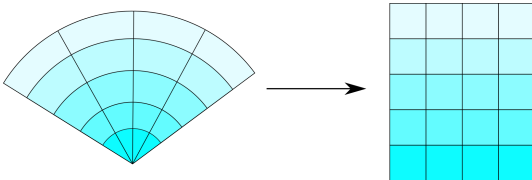


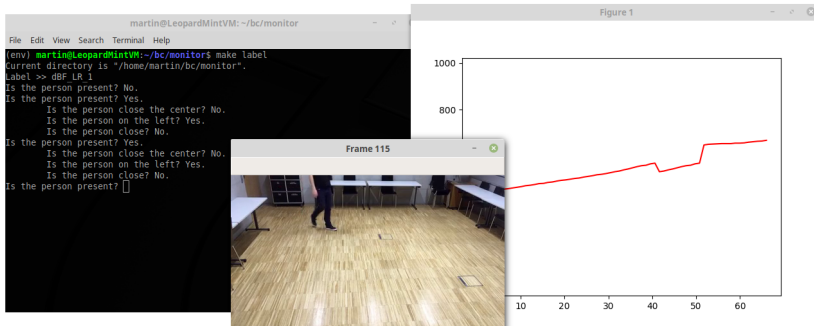


- Based on set of linear regression classifiers.



- Spatial model of sensed area.





- For **localization** cluster analysis is used.
 - K-means
 - Medoids (PAM)
- **Count of people** by minimal within-cluster sum of squares.

- Posterior probability (%)

Aspect	Presence	Distance	Center	Left
Positive rate	75.972	75.785	63.725	49.263
Negative rate	86.542	69.793	53.436	59.327

- Possible improvements
 - Labelling
 - Multiple sensors

Thank You For Your Attention !