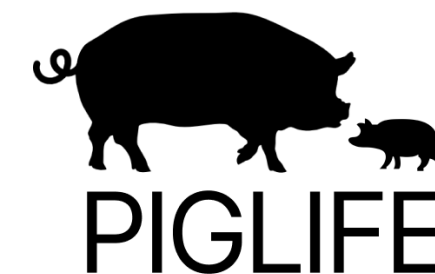




Towards quantitative behavioural indicators related to perinatal pig mortality

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Perinatal pig mortality

stillbirth



farrowing unit



target values

< 7%

< 12%

in practice

20-25 %

Perinatal pig mortality

stillbirth



farrowing unit



target values

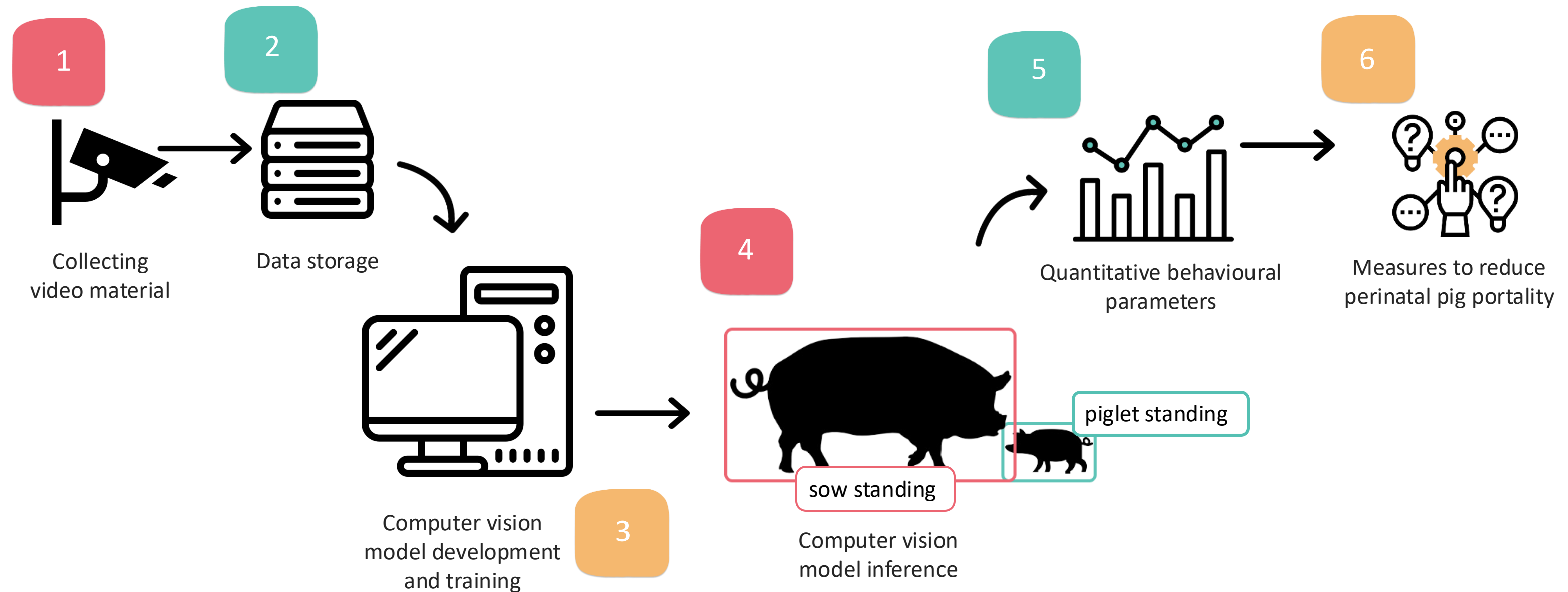
< 7%

< 12%

in practice

20-30%

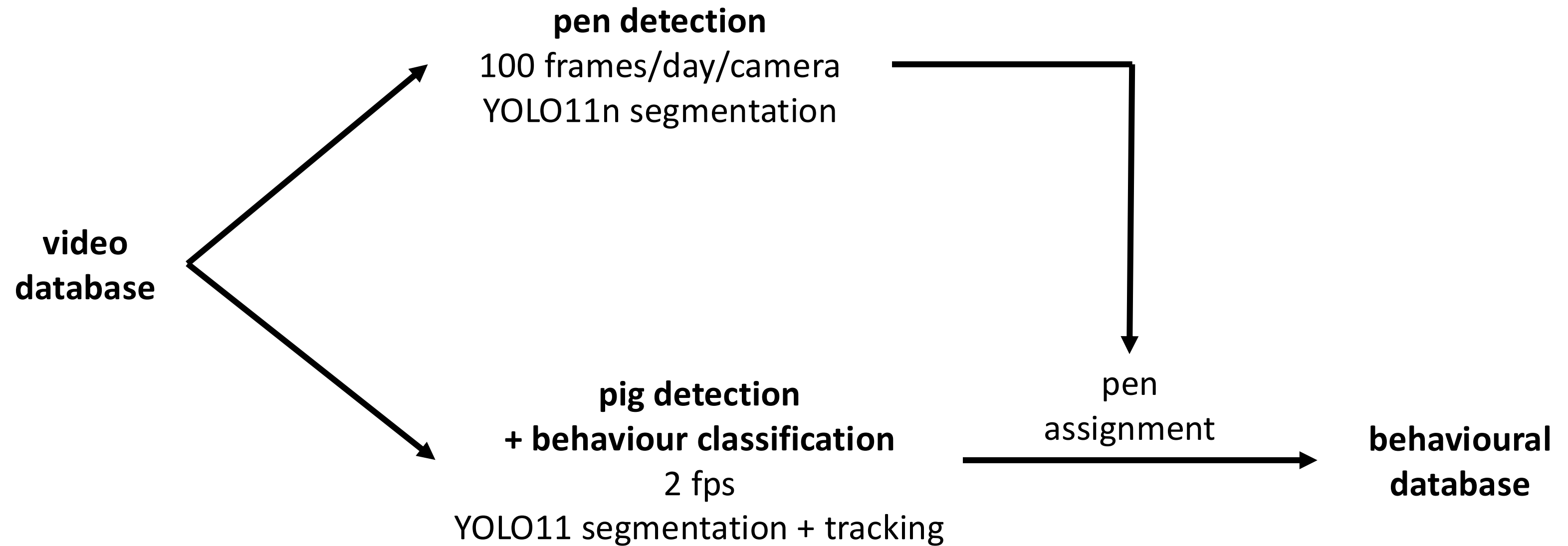
Towards quantitative behavioural indicators related to perinatal pig mortality



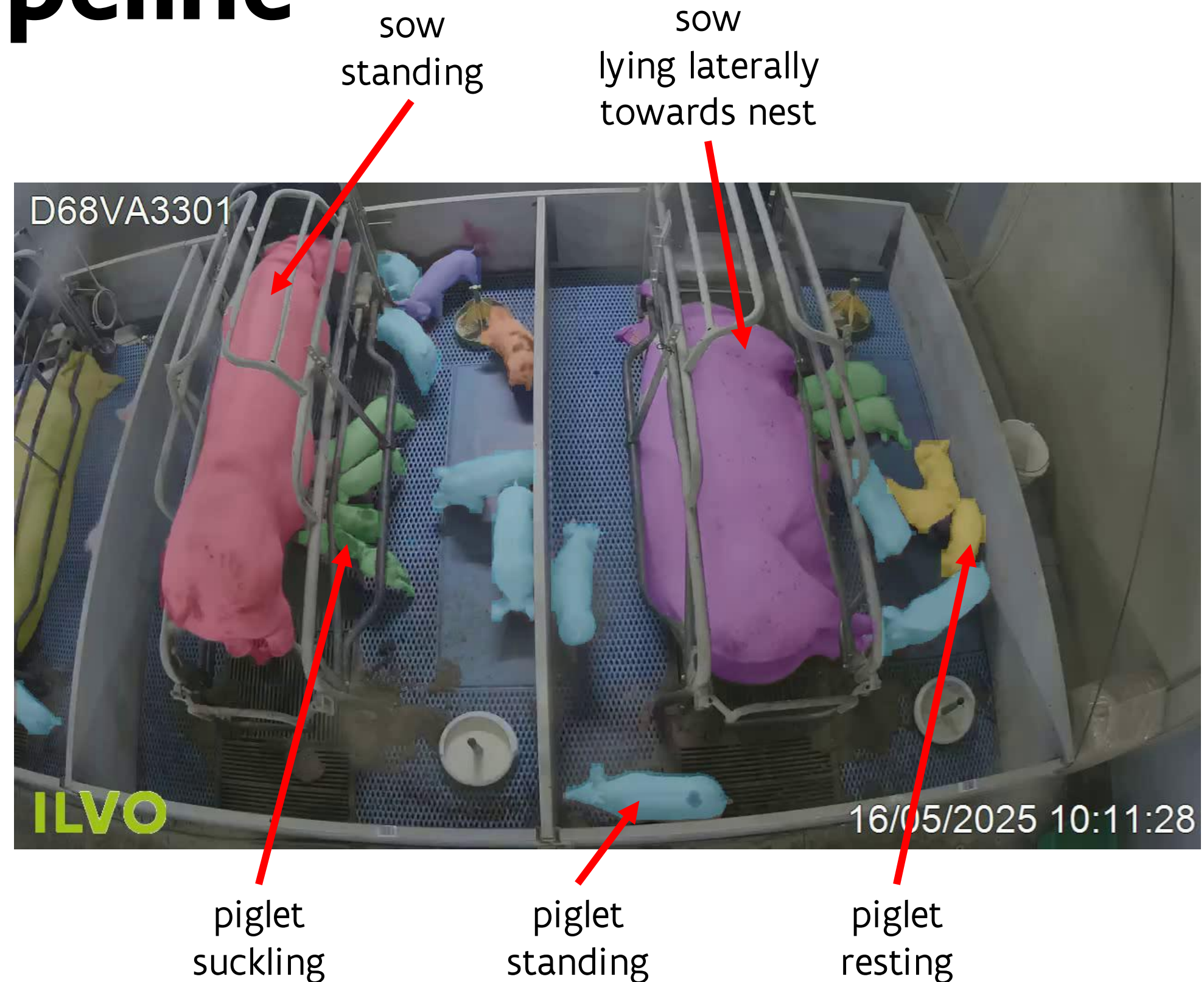
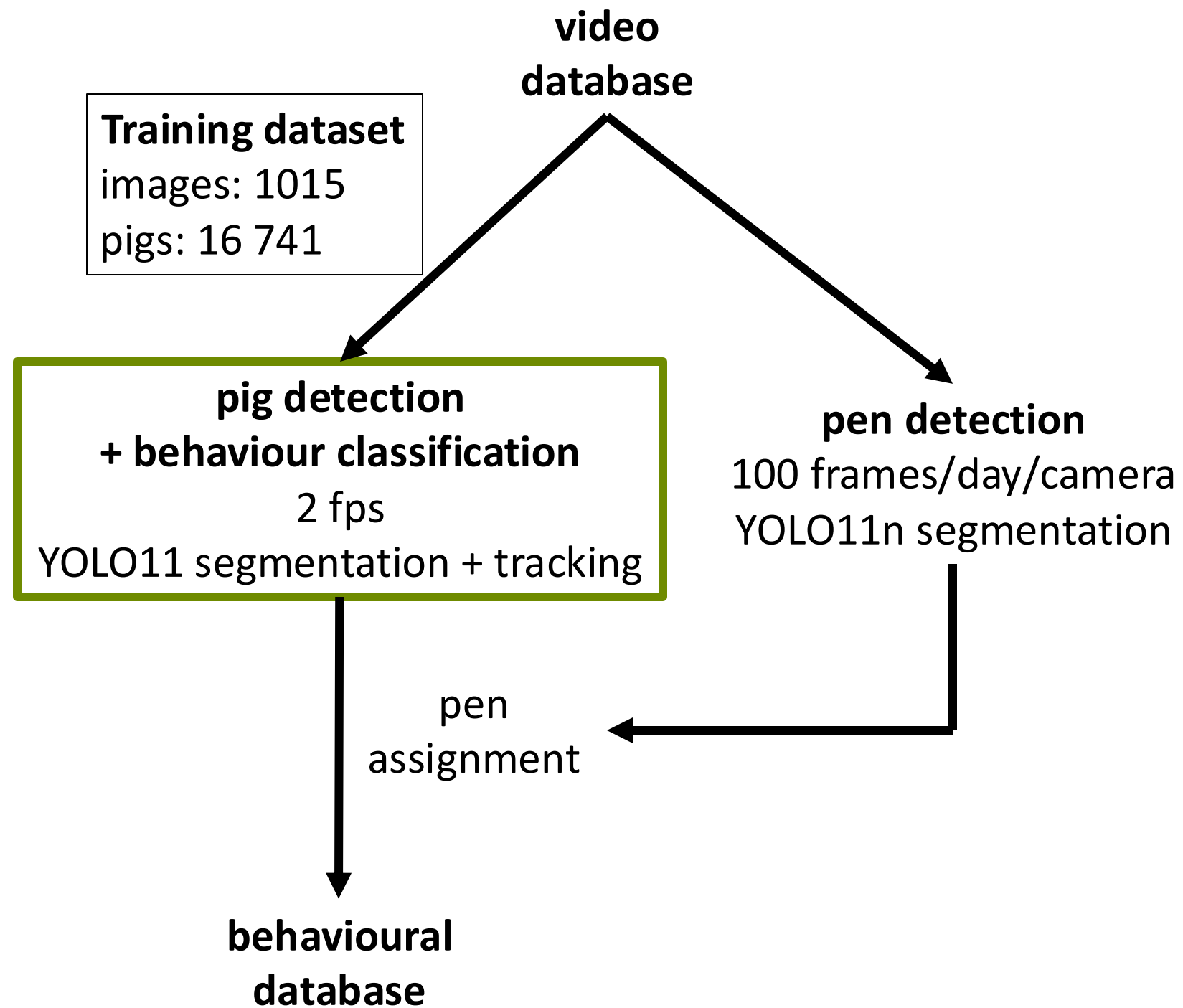
Collecting video material



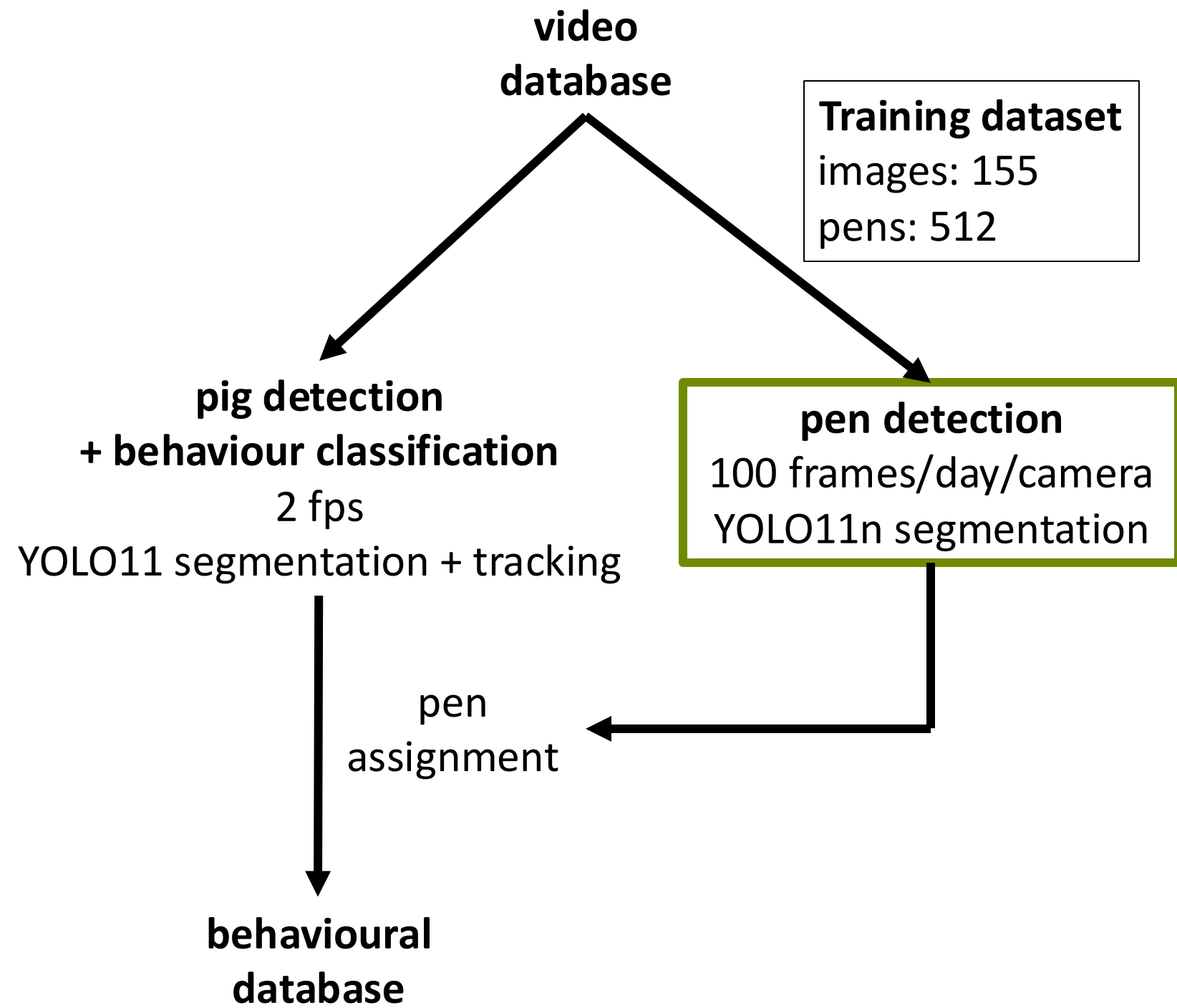
Computer vision pipeline



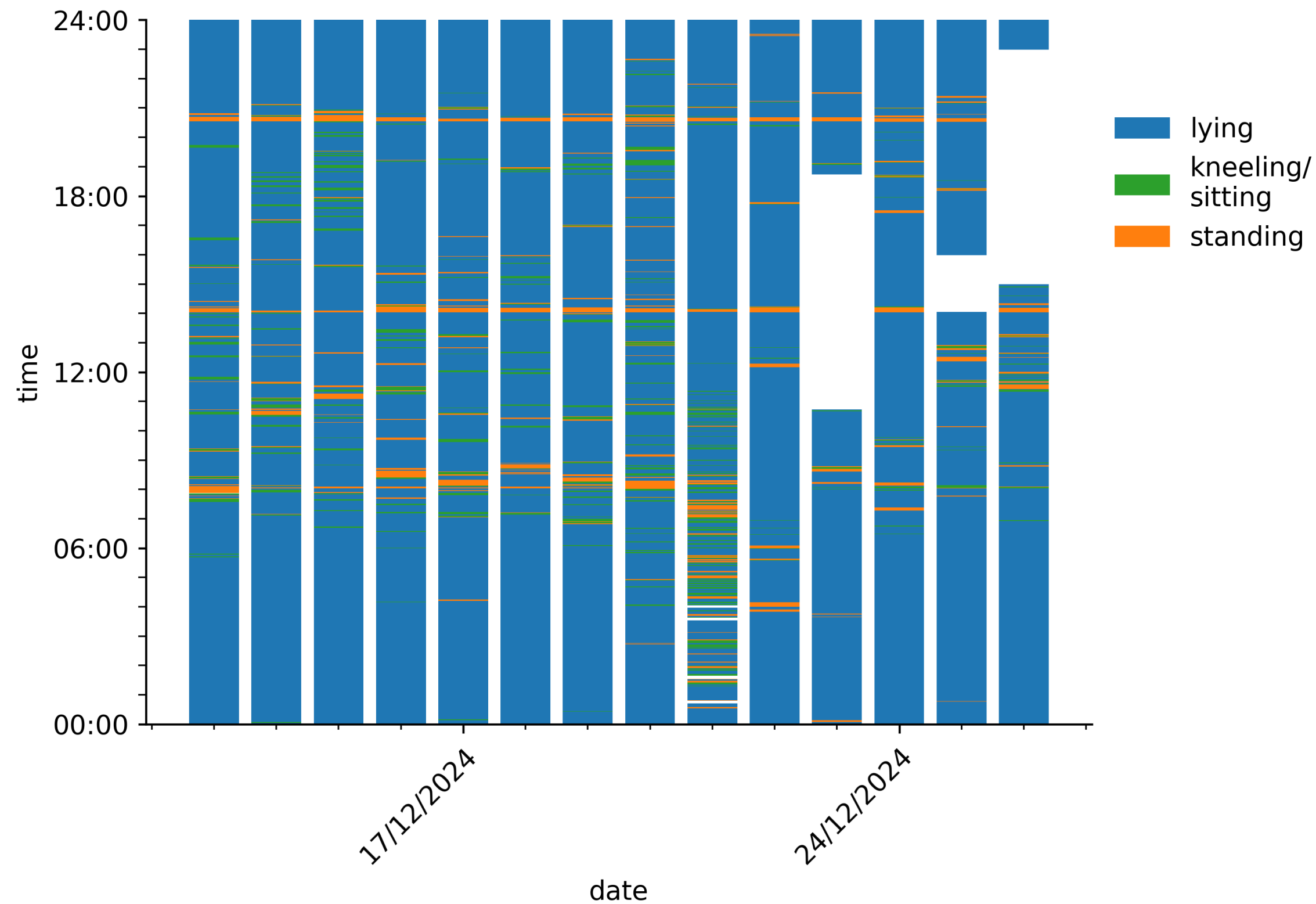
Computer vision pipeline



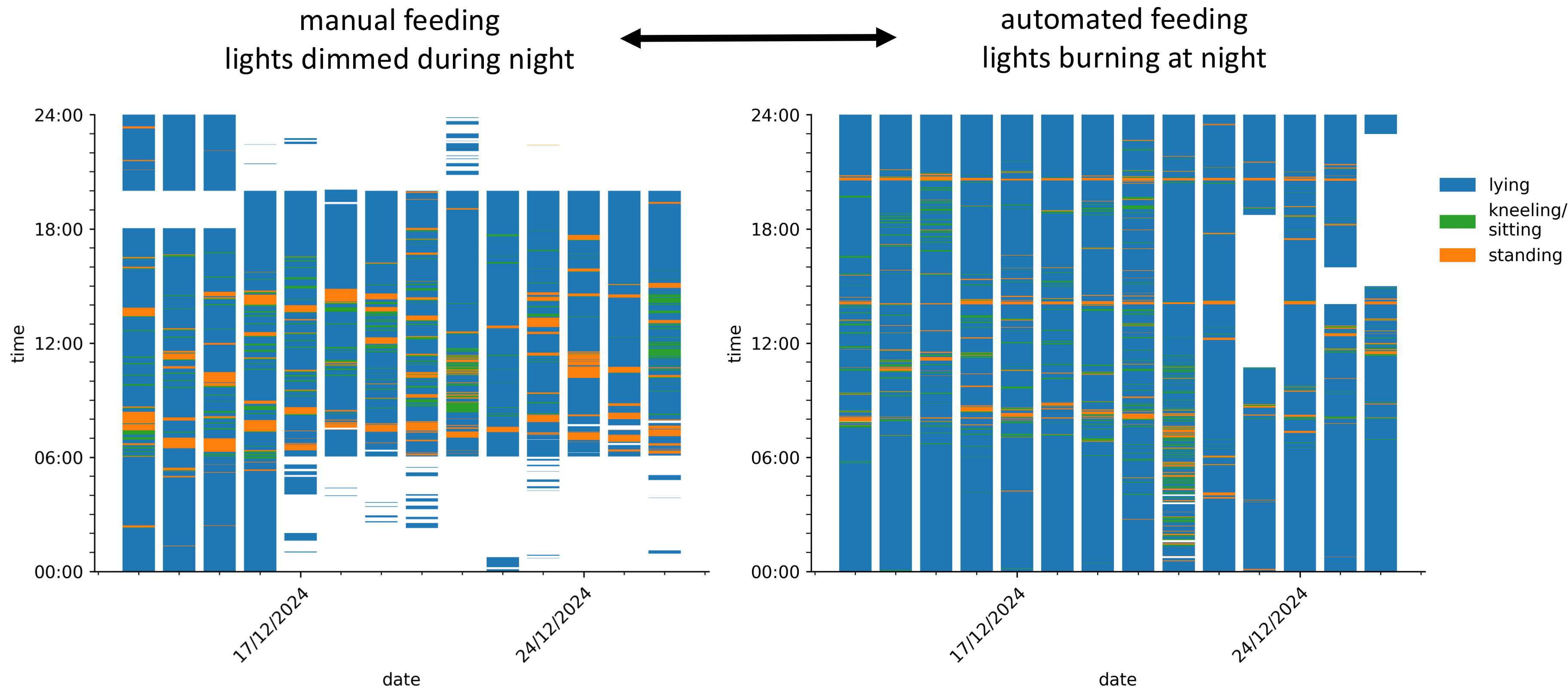
Computer vision pipeline



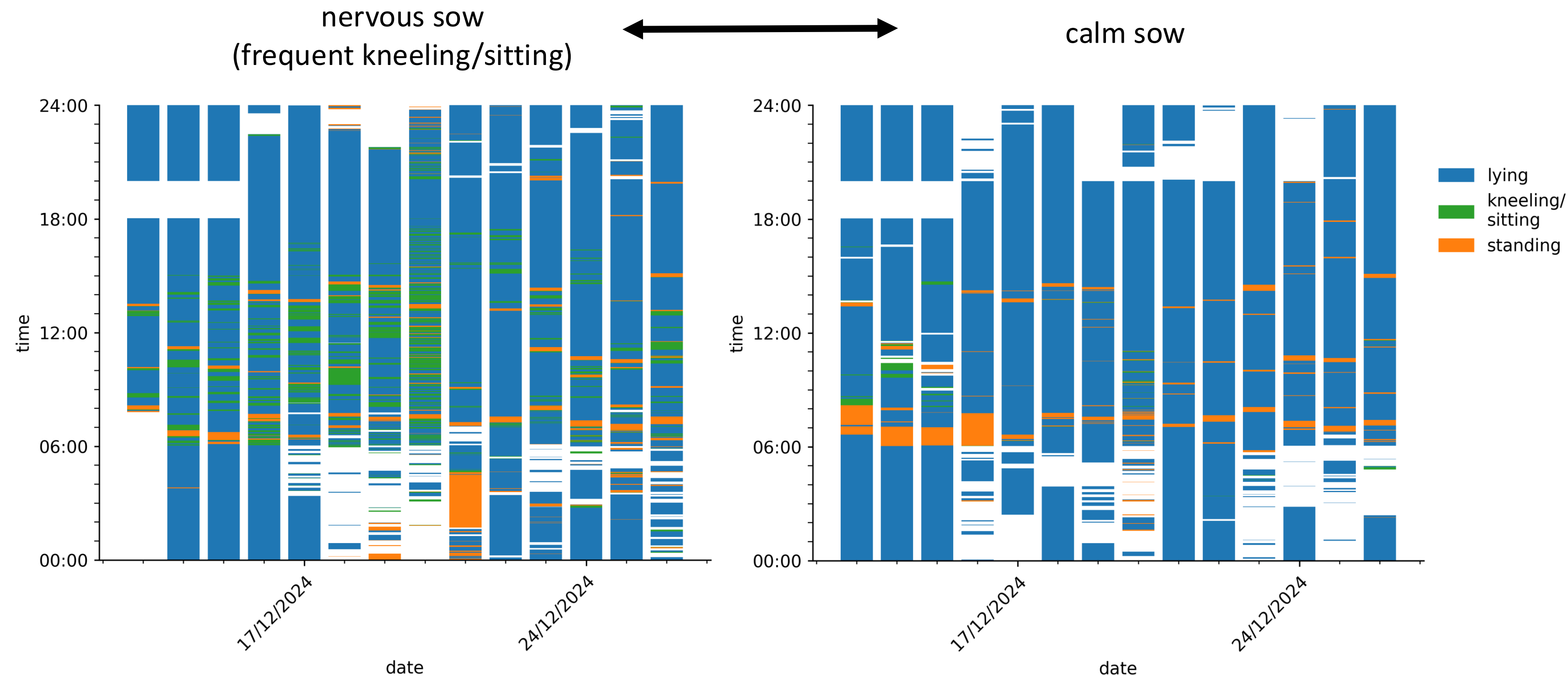
Behavioural analysis: visual



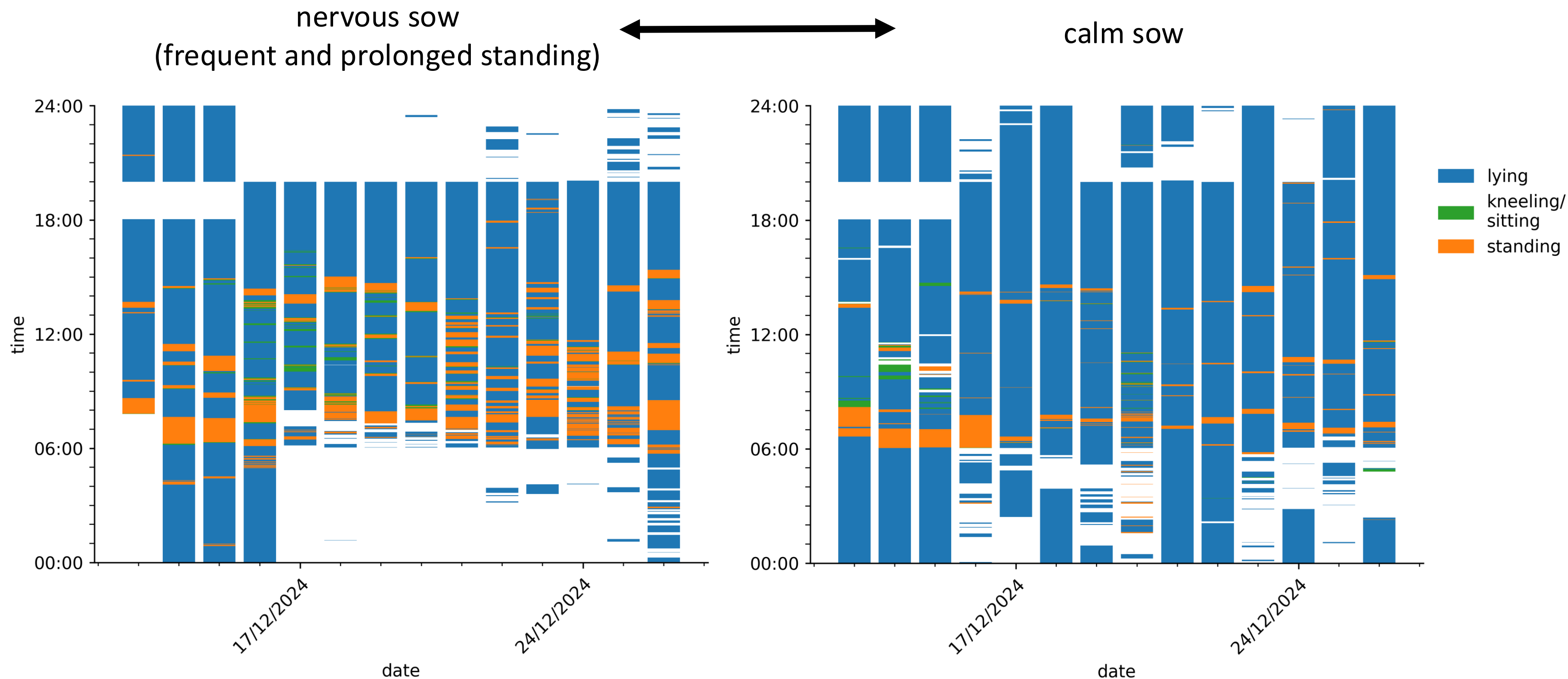
Behavioural analysis: visual



Behavioural analysis: visual



Behavioural analysis: visual



Quantitative behavioural indicators

Sow

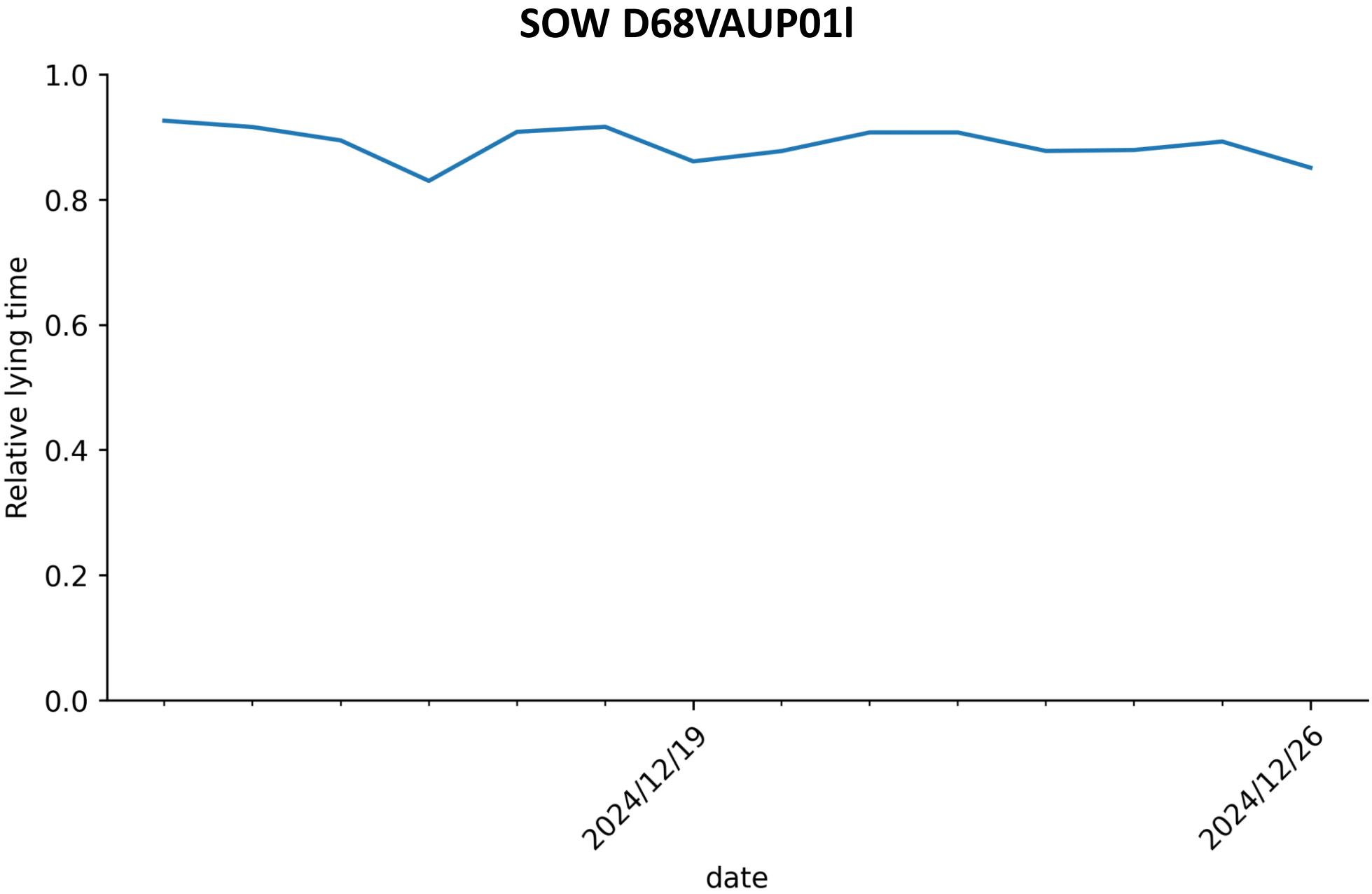
- Lying time
- Lying down frequency
- Rolling frequency

Piglets

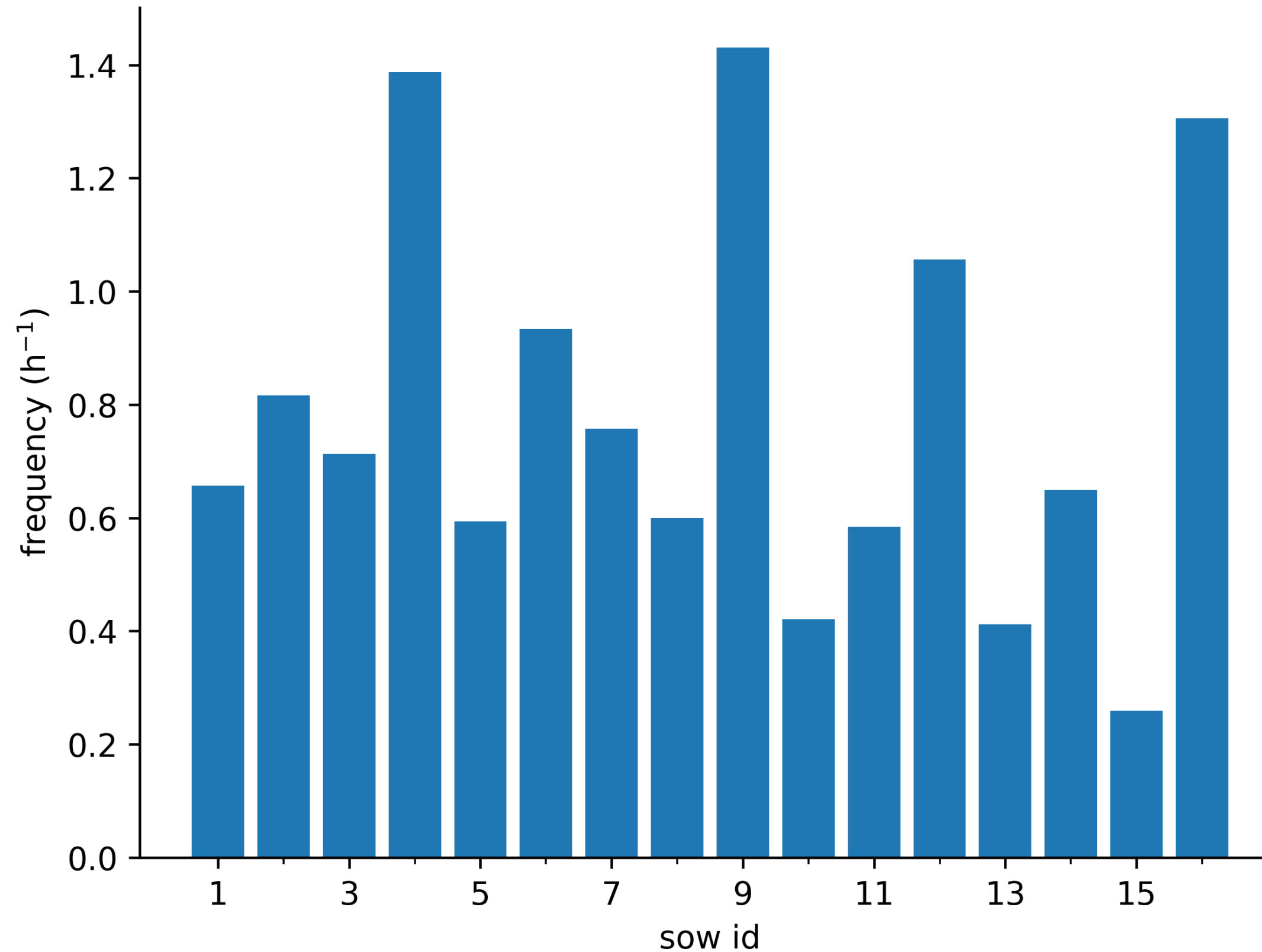
- Piglet dispersal
- Piglet activity
- Piglet nest occupation
- Suckling frequency
- Suckling duration



Sow standing time

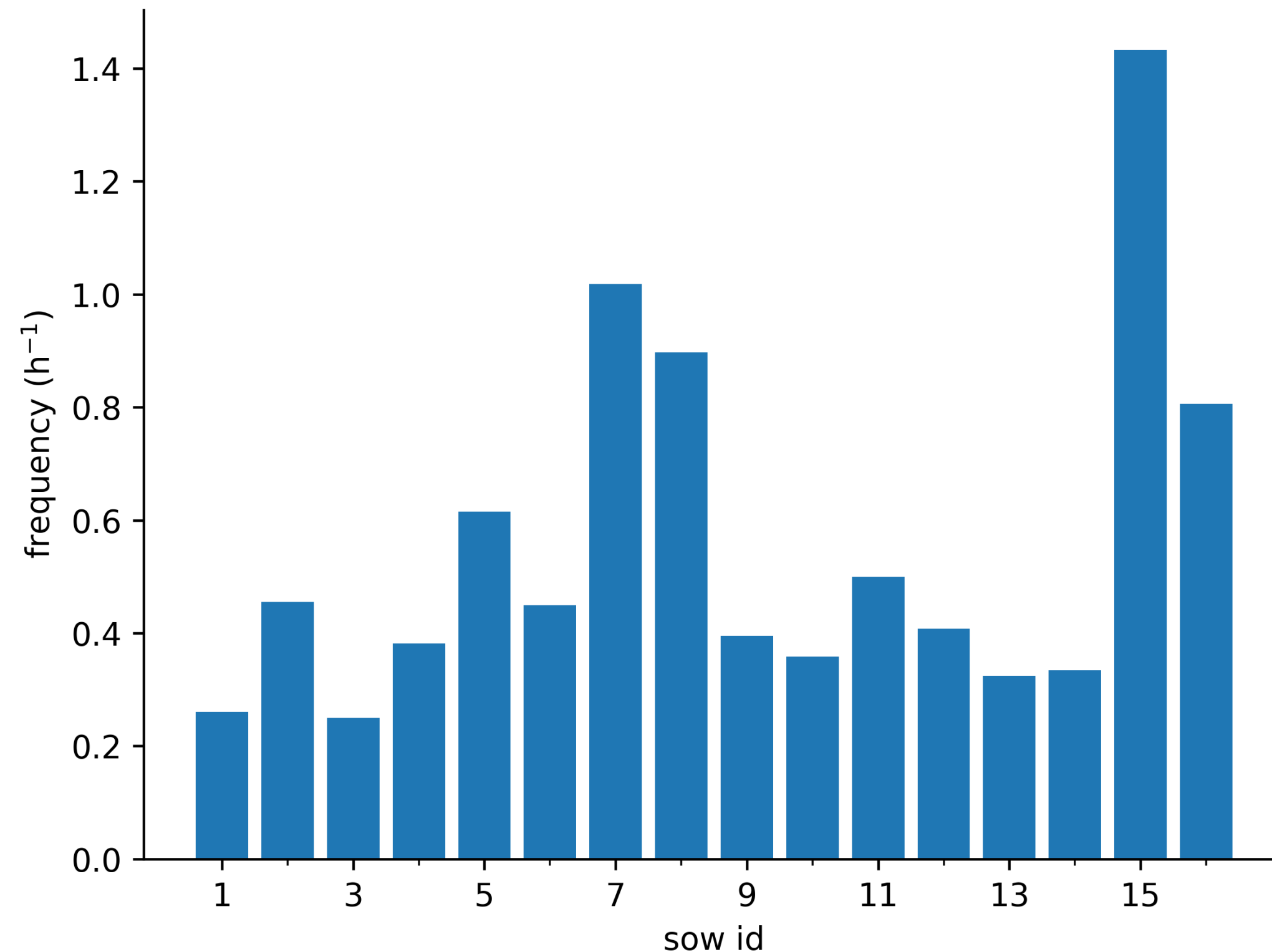


Sow lying down frequency



Sow rolling frequency

- laterally towards nest <-> laterally away nest, without standing or kneeling



Reducing perinatal piglet mortality

- Observation: piglet nest is overcrowded, resulting in piglets looking for warmth close to the SOW
 - ➔ Higher risk on piglet crushing
 - ➔ Advice: use additional heat lamps
- Observation: suckling frequency/duration drastically drops
 - ➔ Early warning to farmer
- Relation between specific sow behaviours and piglet mortality
 - ➔ Genetic selection for better maternal traits



Conclusion

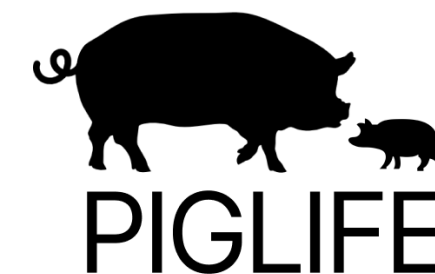
- Piglet mortality is often too high, resulting in an important economic loss
- Computer vision allows to monitor the behaviour of sows and piglets accurately in a labour-efficient way
- Quantitative behavioural parameters show considerable between-sow variability, while within-sow variability is limited
- Behaviour monitoring allows to improve farm management and breeding programs



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