

# Automatic detection of disease events based on accelerometer data

## Challenge



Manual process for recording data was unreliable and expensive

- The client installed accelerometers on mice to record disease events
- The system detected c.100 false positives for each real event
- Results needed to be reviewed and corrected manually by experts
- Data accuracy critical as data set was aimed to be used in pre-clinical trials to compare different treatments

## Solution



Fully automated learning algorithm created to reduce false positive rate

- Fully automated learning algorithm was based on smarter features computed on the signal data, in order to better separate real seizures from spurious detections
- Objective: to reduce the false positive rate by a factor 2, without reducing true positive findings
- Reduce time of analysis by automation and computerized system

## Outcome



PharmaLex achieved a reduction of false positive rate by a factor 10, on databases > 500 gigabytes

- Simulations demonstrated that pre-clinical trial results obtained with the new fully automatic data treatment are undistinguishable from 'perfect' results obtained manually
- Data analysis time decreased from weeks to hours