

Livestock Breeding and Genomics - Exercise 8

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Problem 1: Regression Model

Use the dataset on weaning weight and fit a regression model of weaning weight on breast circumference. The following tasks are to be completed.

- Use matrix-vector notation to specify the model and fill the information from the dataset into the model.
- Compute the solution for the estimated regression coefficient using a least squares approach.
- Use R to verify your result.

The data set is available from

```
## https://charlotte-ngs.github.io/lbgfs2023/data/beef\_data\_bc.csv
```

Problem 2: Fixed Linear Effects Model

Use the same dataset as in Problem 1 and fit a fixed linear effects model using breast circumference and herd as fixed effects in a model. Use the same path to get to the solution as in Problem 1 and complete the same set of tasks.