

Statistical Information Theory

Problem sheet 4 – Assessed coursework

Programming exercise for Lecture 5: Channel codes

Your task is to implement Hamming codes, use them to decode a noisy message, and evaluate the decoding accuracy of Hamming codes through a binary symmetric channel. Download and unzip the data file attached, that contains three files:

- `Lab_4_Hamming_code.ipynb`, that contains detailed instructions.
- `coursework.py`, that contains the functions you need to implement.
- `secret.txt`, that contains noisy data you need to decode.

What to submit: You must submit two files:

- An updated version of `coursework.py` with your solutions. The functions you need to implement are those that raise a `NotImplementedError` in the released version of the `.py` file. You may implement other functions if you find it useful – these will not be assessed.
- A separate `report.pdf` file containing the solutions to Task 2c.