

Mathematical Introduction to Deep Neural Networks

Exercise Sheet 4

Exercise 1. Prove *item (v) in Proposition 2.1.2* in the lecture notes, i.e., that the set of neural network realisations is closed under composition.

Exercise 2. Prove *Lemma 2.1.3* in the lecture notes, i.e., that the composition of ANNs is associative.

Additionally, **Exercises 2.2.1, 2.2.2** in the lecture notes.