

# 11. Exercise “Bioinformatische Methoden in der Genomforschung”

Sebastian Böcker, Martin Hoffmann

Assignment: 25.01.2022

Due: 31.01.2022

## **Exercise 1** (5 Points)

Calculate the PWM (Position Weight Matrix) for the following set of strings:

1. ACGTAGATCGAT
2. CGATATCGATGC
3. CGCTATATCGGA
4. AGCAGCTAGTTT
5. AAAGCTGAGCTT
6. ACGACGTAGCTA
7. ACGATCGATAAA
8. TCTAGGTGATCA

## **Exercise 2** (5 Points)

What are the problem statements of the motif-finding problem? Explain in your own words (include approaches mentioned in the lecture, and explain their complexity)

## **Exercise 3** (5 Points)

Explain why it is favourable to calculate log-Likelihoods instead of Likelihoods