

# Introduction to Computer Graphics and Animation

## Exercise 5 of 5

Prof. Dr. Dennis Allerkamp – December 6, 2024

### 5.1 Textile Simulation

In this task, you should create a demo program for a simple textile simulation.

- Your demo program simulates a hanging piece of fabric (e.g., 20 cm x 20 cm) as a particle system using the algorithms and techniques discussed in the lecture. For this, particles are evenly distributed on the textile and held together by springs.
- Shear and bending forces are also modelled by springs. Make sure to include damping so that the simulation remains stable. Experiment with various parameters.
- The position of the particles and springs should be suitably represented. The colours of the elements could reflect the state of the simulation.
- Your program must use at least the Euler method. However, the Midpoint or the Runge-Kutta methods are better, even though they are a bit more complicated to implement.

Your result might look like this:

