Numerical Methods for Visual Computing
M. Möller, University of Siegen
Winter Semester 17/18

Weekly Exercises 11

To be discussed on Friday, 26.01.2018, 10:15-11:45, in room H-C 6336
Submission deadline: Tuesday, 23.012018, in the lecture

Programming

Exercise 1 (4 points)**.** Implement and test the simplified version of the Remez-Algorithm as shown on slide 20 of the lectures handout to find the best L^∞ polynomial approximation of the function

$$f(x) = \text{sign}(x)\ \sin(\pi\sqrt{|x|})$$

on the interval $[-1, 1]$. Compare your results to the results of the previous exercise sheet.

Exercise 2. Write an algorithm to compute the coefficients of the natural C^2 spline for given sample points (x_i, y_i), $i = 1, \ldots, n$. You may return such coefficients as a vector (and do not have to worry about how to efficiently evaluate the spline in Matlab).