Exercises for
Introduction to Pattern Recognition (IntroPR)
Simone Gaffling and Oliver Taubmann
Work sheet 8, 3.12.2014

Frequency Domain Filtering II, LPC

Exercise 21 You have acquired the following signal:

t	0	1	2	3	4	5
$f(t)$	-2	0	1	-1	0	2

(a) Compute the LPC (linear predictive coding) coefficients a_1 and a_2 of the signal and use them to determine $f(6)$.

(b) Use the coefficients a_1 and a_2 to estimate the values $f(2)$, $f(3)$, $f(4)$ and $f(5)$, too.

Exercise 22 **Programming Task:** Extend the program to enhance the Saturn image from last exercise by the following parts:

- Use a windowing function (Hann and Bartlett window, plus another one of your choice from the lecture slides) and compare the results to the unwindowed version.
- Try to find a combination of filters (e.g., thresholding, morphology, ...) to automatically mask the spectrum components associated with the artifact.