

Unsupervised Learning

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Exercise Sheet 1

Exercise Sheet 1 - Introduction to R

1. Download and install a working R environment. I recommend RStudio which is a very comfortable IDE and more or less the *de facto* standard. It is available for the most common operating systems (i.e., Linux, Windows, MacOS) and can be downloaded for free at: <https://www.rstudio.com/>
2. Create a comma-separated file and read it as a matrix into your R program.
3. Write a function performing matrix multiplication. Compare your solution to the built-in capabilities of R to check whether everything is correct.
4. Write a function calculating the determinant of a square matrix. Again, check against the built-in capabilities.
5. Create large random matrices and
 - (a) compare your program's performance (in terms of runtime) versus the built-in capabilities for growing matrix sizes
 - (b) create a plot depicting the runtime vs. matrix-size