

How to improve your Matlab code

My name is Carl Nettelblad, and I am an associate senior lecturer and docent in Scientific Computing at the Department of Information Technology, UU. I have been involved in developing computational software in several interdisciplinary projects, as well as teaching Matlab, Java, C++, R, and Python to undergraduate and graduate students alike.

I have been asked to host a workshop in software engineering focusing on Matlab.

Workshop schedule Tuesday 11th December

9.00 Good morning and coffee!

9.15-10.00, 10.15-11.00 Common topics in software engineering. Modularity, reusability, testing, documentation. Version control using git. Reproducible science in the context of computations.

11.15-12.00 Dos and don'ts. Some practical examples, concrete hints about how to get good performance and good accuracy in Matlab. Looping and looping order, effects from using floating point numbers.

Common lunch provided by the research school

13.15-14.00 Case studies. Some comments based on your questions.

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14.30-16.30 (at most) One-on-one tutoring, discussion.

This schedule is tentative. The afternoon is fully intended to be based on concrete questions and requests from you. These can be on the form of "I want to compute this thing", or "I have this piece of code, but it is too slow", or "this published code from a paper does not seem to give reasonable results", or "this ALMOST works, what is wrong". Try to be as specific as possible! The morning schedule might also change depending on your needs.

The morning will almost exclusively be devoted to Matlab, but you are very welcome to ask questions about R (or Python) as well. Many of the take-home messages of the morning lecture are rather how to approach software engineering in a scientific context in general, even if the practical examples are in Matlab.

I will choose some of your questions for the case study session, where I think the response could be informative for all participants. I won't do that without first asking you whether that's OK, though.

Please e-mail me your questions, fields of interest or ideas no later than 27th November!

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