

# How to be a 'good' git evangelist?

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UiO : **University of Oslo**

# Outline

Why I want to answer this question

Good scientific software

'Good enough' scientific software

Discussion

# Why I want to answer this question

## ► My experience

- PhD in computational physics
  - Plasmonic and optics
- Currently an RSE
  - Meteorology and oceanography

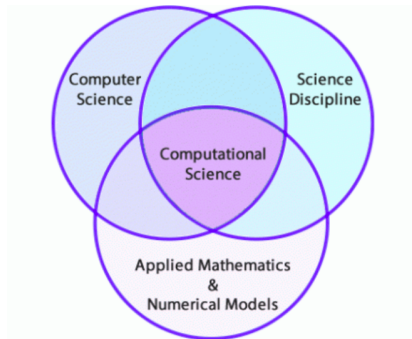


Credit: Michele Rosenthal

An RSE in academia

# Why I want to answer this question

## ► My experience



Credit: <https://computingstudy.wordpress.com/scientific-computing/>

Computational science

What is good scientific software?

[1], [2], [3], [4], [5]

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[1] Greg Wilson et al. “Best practices for scientific computing”. In: PLoS Biol 12.1 (2014), e1001745

[2] Ask HN: Why aren't more programmers in academia? <https://news.ycombinator.com/item?id=19475588>. Retrieved 09:01, April 21, 2021.

[3] Programming In Academia Vs Industry. <https://medium.com/@rdaszy/programming-in-academia-vs-industry-5fb52852ea39>. Retrieved 09:04, April 21, 2021.

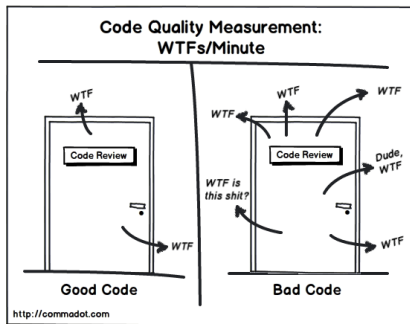
[4] On the quality of academic software. <https://lemire.me/blog/2012/06/18/on-the-quality-of-academic-software/>. Retrieved 09:07, April 21, 2021.

[5] THE LOW QUALITY OF SCIENTIFIC CODE. <https://techblog.bozho.net/the-astonishingly-low-quality-of-scientific-code/>. Retrieved 09:27, April 21, 2021.

# Good scientific software

## ► My answer

- Something that works
- Standardized
- Understandable
- Reproducible [6]
- Maintainable [\*\*]



[6] Neural Information Processing Systems: The Machine Learning Reproducibility Checklist. <https://www.cs.mcgill.ca/~jpineau/ReproducibilityChecklist.pdf>. Retrieved 08:57, April 21, 2021.

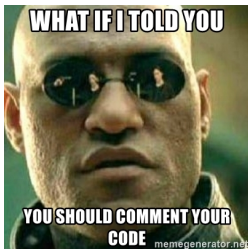
[\*\*] Common estimate: spending 20% of the developing time for maintenance work

# Good scientific software

## ► Tools



Version control

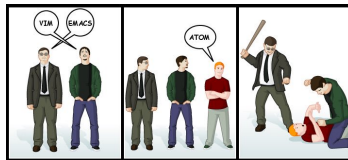


Documentation



Credit: <https://www.pinterest.co.uk/pin/536209899356890025/>

Containerization



Credit: <https://i.redd.it/798myjzkwmjz.jpg>

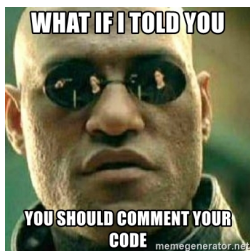
(Modern) editor

# 'Good enough' scientific software

## ► Tools [8]



Version control

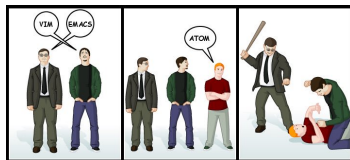


Documentation



Credit: <https://www.pinterest.co.uk/pin/536209899356890025/>

Containerization



Credit: <https://i.redd.it/798myjzkwmjz.jpg>

(Modern) editor



## Discussion

### ► How to be a 'good' git evangelist?

- Is version control the most important tool for a scientific developer?
  - Are there other tools that are more important? (i.e. debugger, containers )
- How can we motivate scientists to learn to use version control?
- Do all code projects need version control?
- When should the scientific developer learn to use version control?
- How and who should teach version control's best practices?



Credit : <https://xkcd.com/1507/>

Git usage in a nutshell