

Pre-questions for HeartDown Expert Study

1. How do you currently communicate mathematical topics informally (e.g. when discussing a project, long before preparing it for publication)? *

If it's inperson meeting, I will write it on my ipad or papers with pencil, so we can discuss together; if I want to discuss in email, I will write on my ipad and export to an pdf file and send it. Or I will write in markdown apps(like typora) and then send it; if I'm in a online meeting with others, we will use online whiteboard to write down mathematical formula.

2. How do you use verbal discussion, formalizing ideas in mathematical symbols, and writing code in a programming language? *

I will use different ways, including paper + pen, ipad, web platforms like google doc, slide, and overleaf to write latex, to formalize ideas. For mathematical symbols, I mostly use markdown and latex. For programming, I mostly use C++ and Python.

3. Do you ever write math in an email or on slack? *

Yes. I have written math in emails. I would directly use syntax of latex to describe equations and symbols.

4. What is your current process for preparing an academic paper or web page for publication? *

Assume the project is mostly done, only the paper writing part is left for this project. I will summarize discussion history, idea, figures, code, and other experiment results into a presentation slide, and then first finish the method and experiment sections of the paper or website. Then I will go back to motivation part and finish introduction. I will finish related works last.

5. What tools do you use? *

C++, python for programming; latex, markdown for editing equations; google doc and slide for common recording ideas and discussions, and draw figures and present results; overleaf to write final paper or report.

6. What do you like about them? *

Different tools fit for different tasks. I select them because they are free, efficient on specific tasks.

7. What do you dislike about them? *

Currently I am mostly satisfied, but there are some minor concerns: Need to search command for symbols, characters. Need time to start. Need training if want to be an expert on those tools. You need debug them when using. If there is a better one I will change the toolset.

8. How much time do you estimate it takes to implement something correctly versus writing the math formally? *

2-5 times. I need time to make sure the code works in all conditions, which includes implementation, debugging, creating unit tests, running to get final results, etc.