

Loading data	Pulling data requires "going to seperate cloud instances to bring down the data locally, taking that to a file, and uploading it..."
Cleaning data	Efforts to scrub data are mostly clerical. There's "no mystery—it's just time consuming".
Modeling	"I need immediate feedback, like when I am testing slight changes in the model. I don't want to execute everything again".
Visualising	"Everything is in a cell, and the chart is limited by the boundaries and real estate of the notebook".
Iterating	The lack of code assistance is frustrating. You have to "go through the same ceremony to do even the most basic modelling task".
Writing code	"Anyone who tries to use notebooks has to start off with an IDE and then graduate into a notebook".
Managing dependencies	Managing packages and library dependencies within the notebook is, to put it bluntly, a "dependency hell".
Debugging code	It's a "horrible experience". "The only way to debug in most notebooks is through the use of <code>print</code> statements".
Testing	"There is no standard way to test notebooks". Different users "end up following different approaches".
Executing	Sometimes "it's easiest to just restart and run the whole notebook again".
Scaling	"The data is way too huge for notebooks to handle".
Versioning	There is "a lot of room for improvement when we want to check notebooks into source control".
Searching	Folders and files "become disorganised fast", making "finding and navigating to the intended file difficult".
Handling sensitive data	Adding security is time-consuming but handling desensitised data is dangerous—"if [you] screw up something, it can be leaked".
Controlling access	"The only way to share notebooks securely is to upload notebooks to secure team drives".
Sharing the notebook	It is common to present notebooks to other people. Despite this, sharing notebooks is "messy".
Sharing supporting artefacts	"Sharing...is kind of useless without the underlying data". Users also need to "match the environment settings of the notebook".
Editing collaboratively	"Collaborating in real-time with multiple users on a single notebook is super powerful". However, it is "not straightforward".
Reproducing	"The only way another person can run the notebook is if they're able to match all the environment settings".
Reusing and adapting	"...reuse can become more complicated than expected", like when "there are complex dependencies to bring into the new notebook".
Scheduling long-running computations	There's no feedback. "When the process is done" the notebook should "automatically create a notification".
Packaging as a standalone artefact	"It's very difficult and painful to transition notebooks to production code without doing a full rewrite".