1. **Automate the process:**
   * 1. Plugins->Macro->Record
     2. Execute all the steps
     3. Recorder->Create (Saves .ijm file of macro)
2. **To run on a new image:**
   * 1. Drag and drop the image and macro into fiji and click run in the macro window
3. **Debugging:**
   * 1. If you made a mistake during the process, revisit the process and try to ID the step where you messed up
     2. Change the parameters, instead of redoing the whole pipeline
4. **Window Name Errors:**
   * 1. When you create the macro using “FileA.jpg”, it will give errors if you use it on another image
     2. It can’t generalise
     3. *Solution: Instead of string for filename, use a variable like*

*Channel1 = File.name (it autocompletes)*

*And e.g. if it creates another image titled c1-…..jpg, then use*

*Channel2 = “C1-“ + File.name*

*(ImageJ Macro language is quite annoying like this)*

* + 1. *Solution: You can choose Language->Python (but it’s very limited, so you can use Java instead)*
    2. *We can have for-loops, if statements etc.*

1. **To process a folder of images:**
   * 1. Templates-> ImageJ 1.x -> Process Folder (IJ1 macro)
     2. This opens a template, where you can insert your own code in the processFile() function
     3. The other function, processFolder() is a recursive function that ends with processFile() as the base case
     4. Make sure Input folder has all “.tif” images and Output folder is empty
     5. Be sure to include, this in processFile()

open(input + File.separator + file);

//Actual steps

save(“Tiff”, output + File.separator + "FrangiOUTPUT\_" + file);

run("Close All");

1. **Plugins:**
   * 1. Most of the advanced plugins are macro-recordable (Power of Fiji)
     2. E.g. Machine learning based pixel segmentation
     3. DO the whole process, with recording on
     4. Now save this as a macro, so you can use it later

Resources:

* ImageJ website: Built-in functions
* Forum.image.sc (community)
* Neubias academy (talks on macro language, machine learning with fiji etc.)