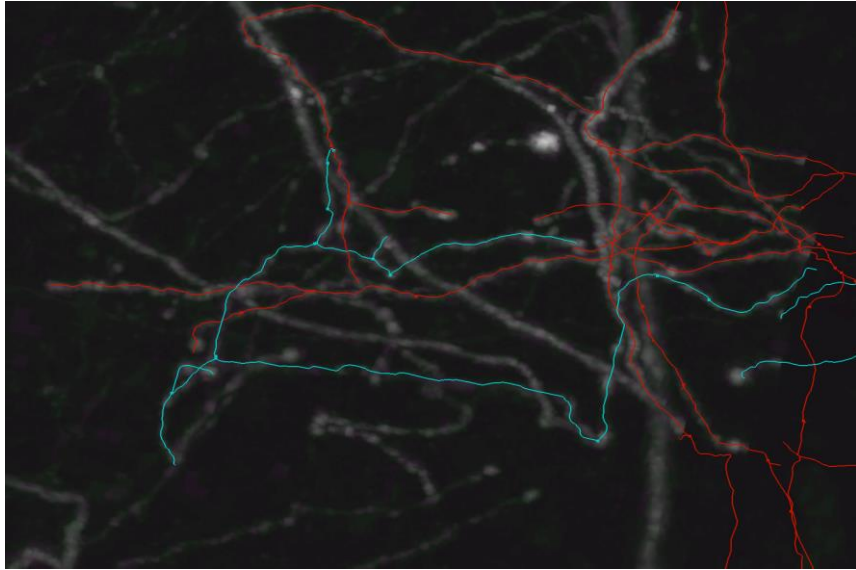# How to use TeraFly to improve the efficiency and quality of neuron reconstruction
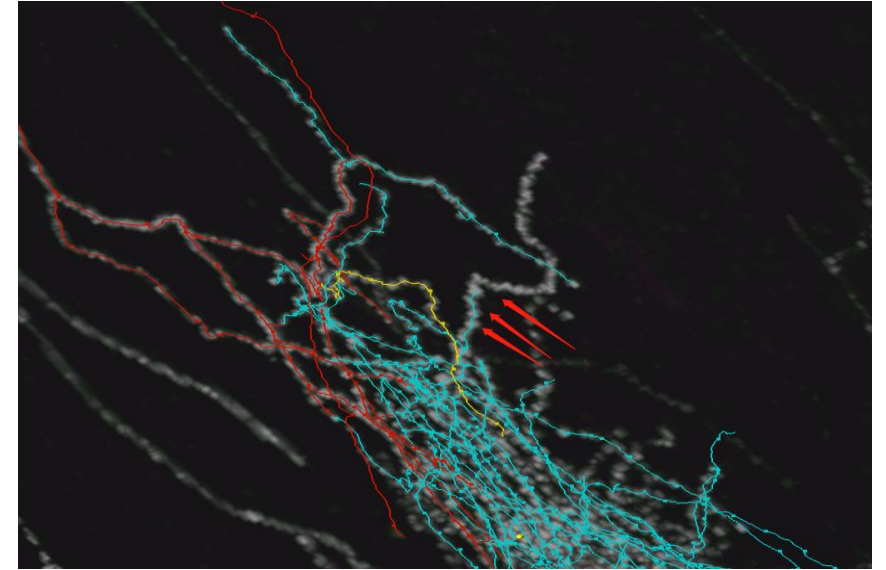
Yuanyuan Song

2021.11.9

The main problems in the neuron reconstruction process
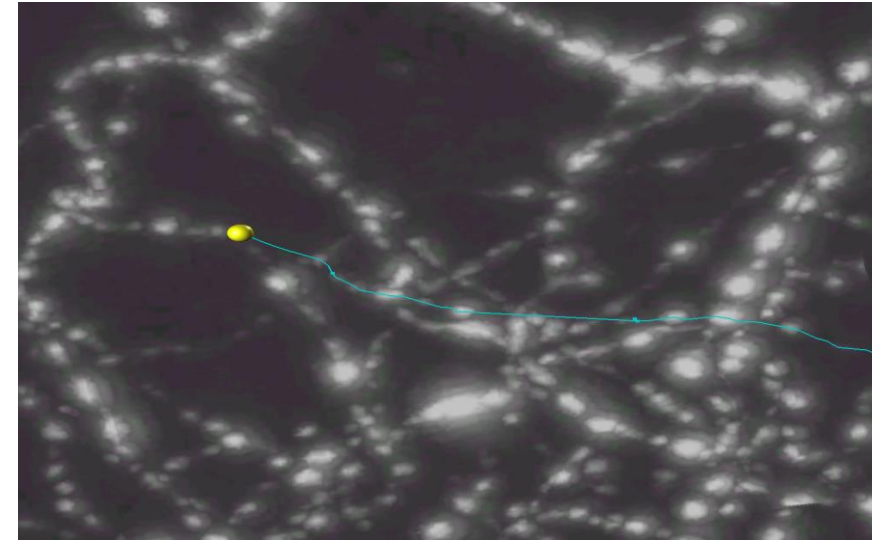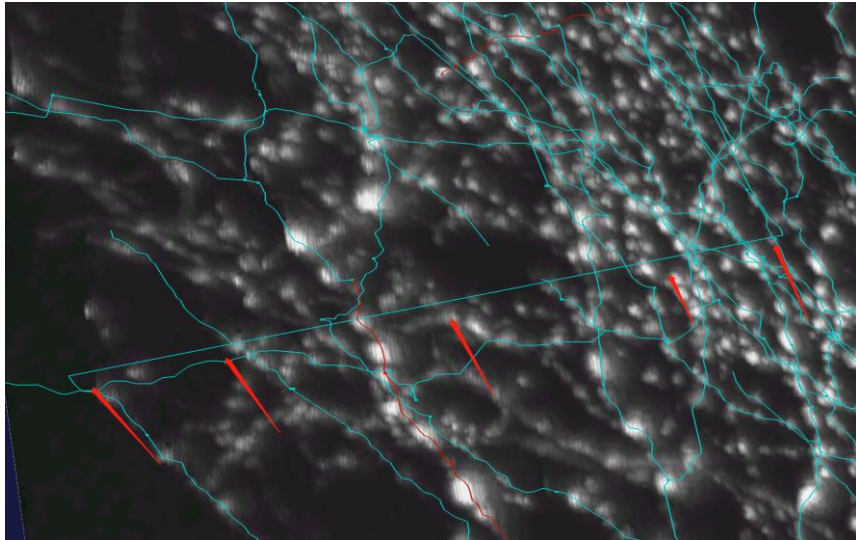

Incorrect neuron morphology

Missing branches

Wrong connection

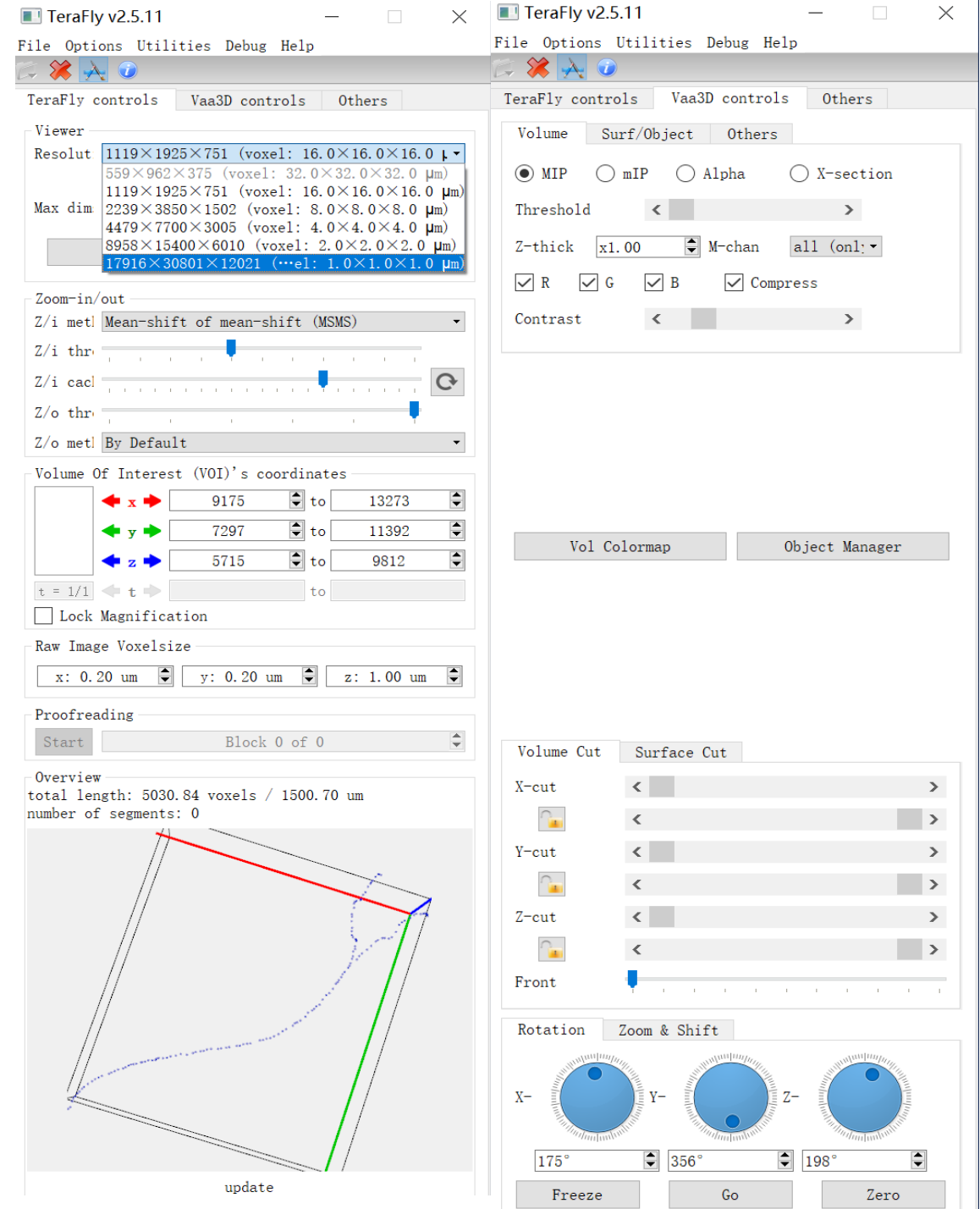Uncertain situation

Reconstruction techniques

1. Autotracing

2. Global view

3. Local operation
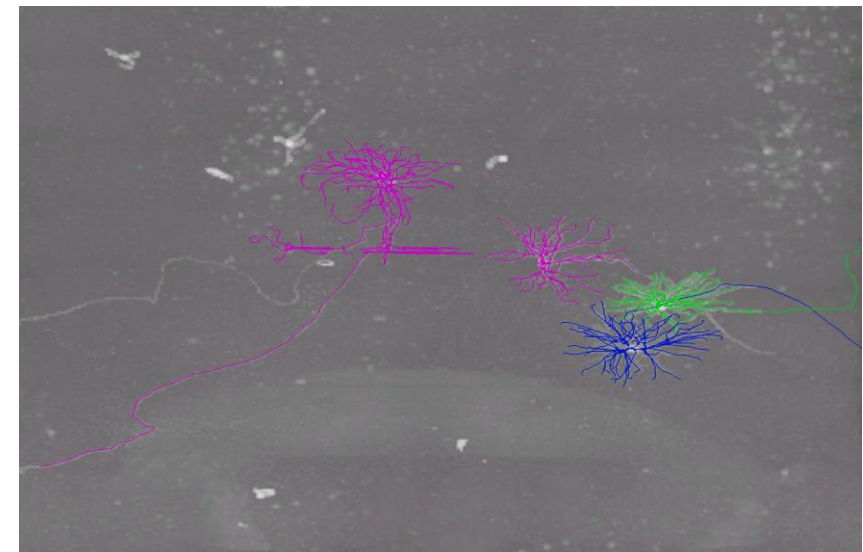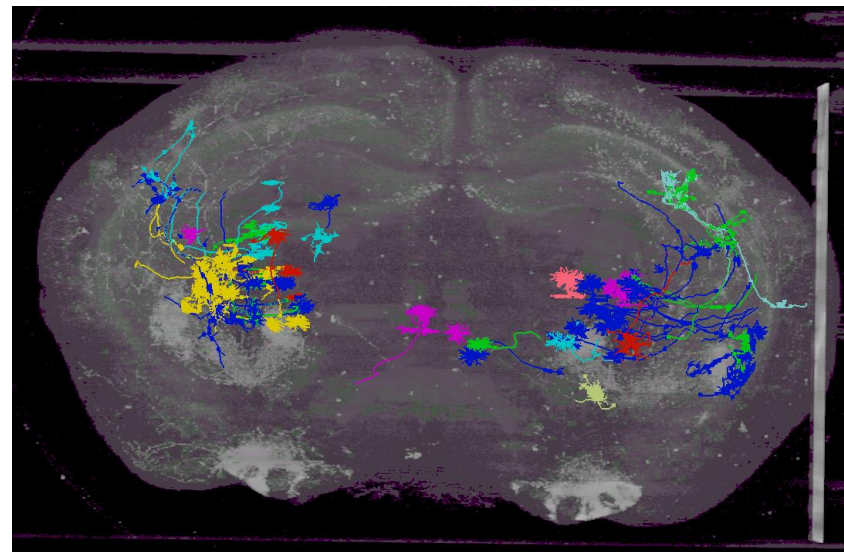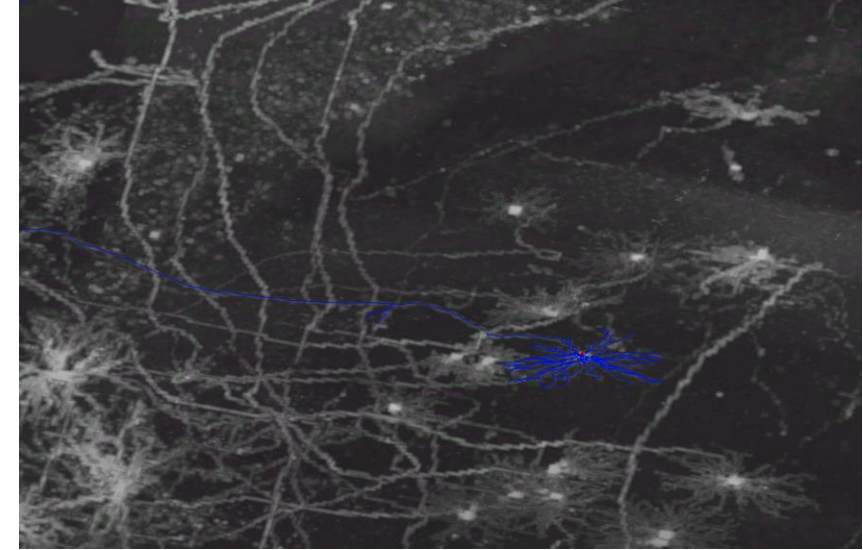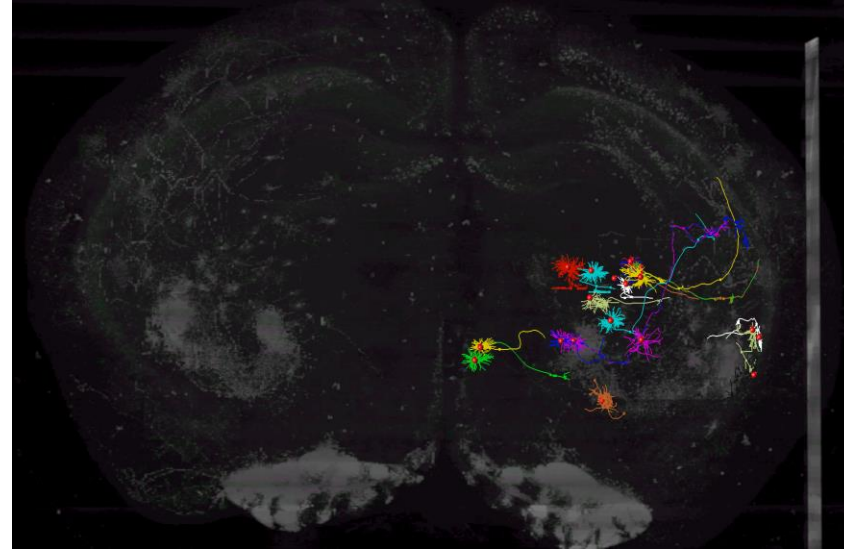
4. Flexible use of functions
   - Flexible switching of top three high resolution
   - Cut
   - Multi-rotation to find the appropriate angle
   - Shortcuts
   - Text editing - change colors

Autotracing

The autotracing results can be viewed in batches, and the results that you think are better can be selected, so that the reconstruction on this basis can save time.
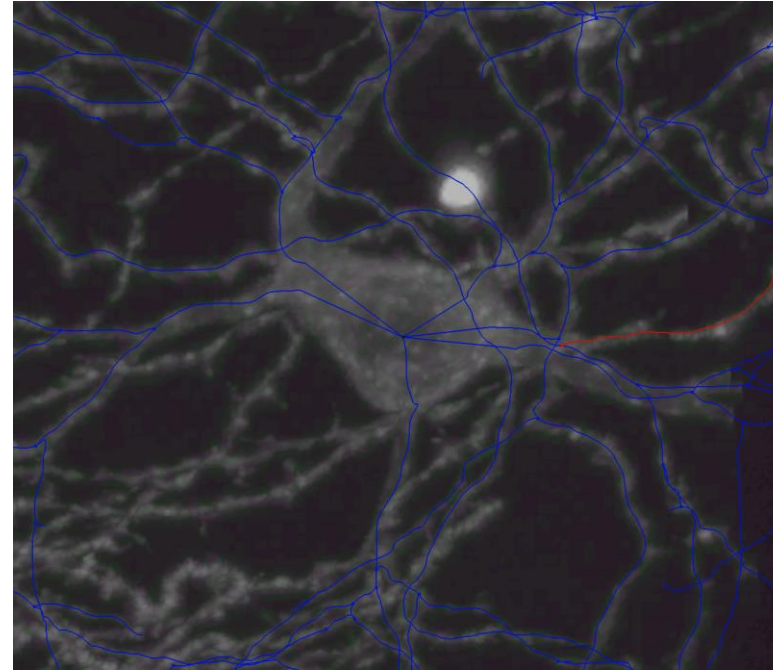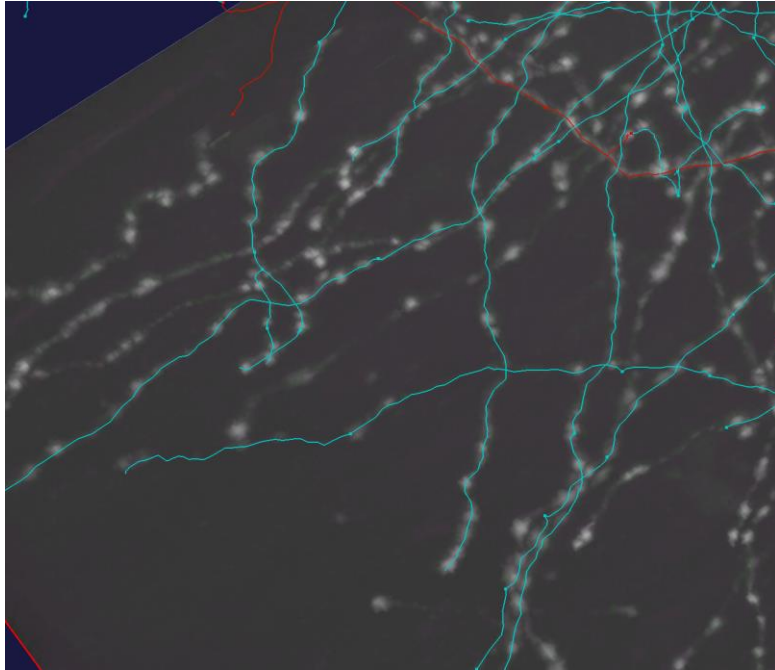
Global view

It is necessary to have a global view and initial judgment on the general morphology of neurons. Especially for the case of sparse neurons, it can be clearly judged whether the branches traced belong to the neuron.
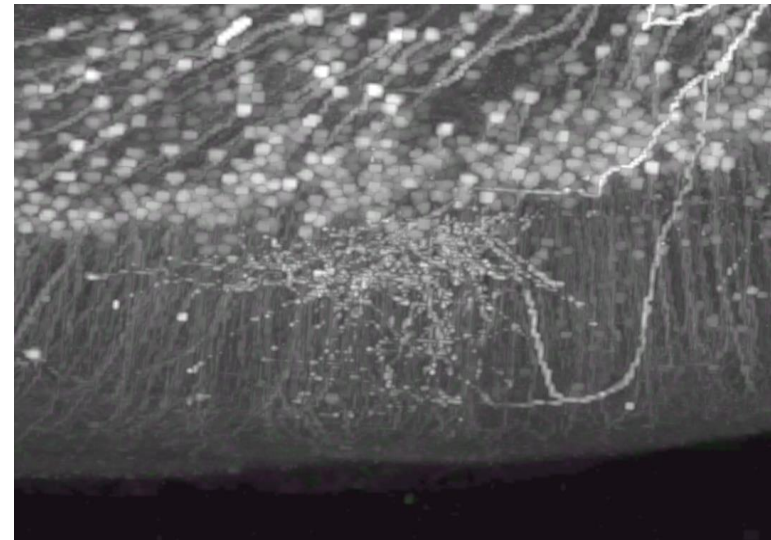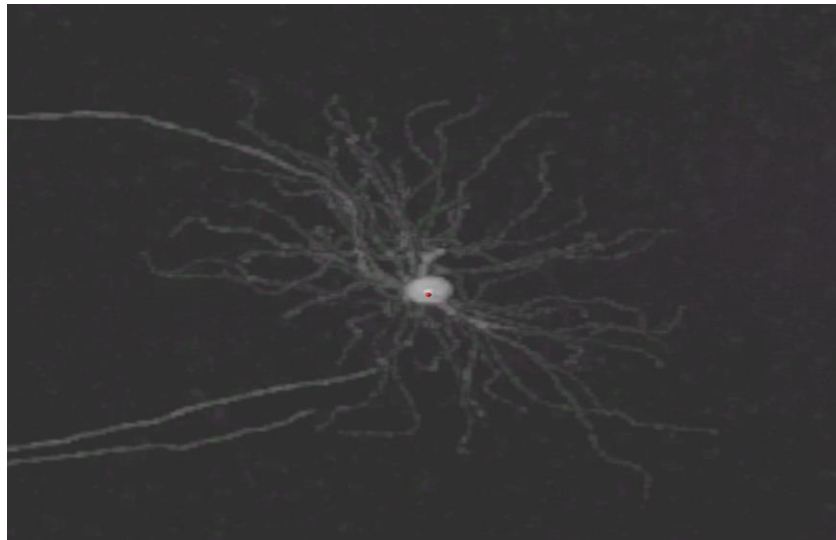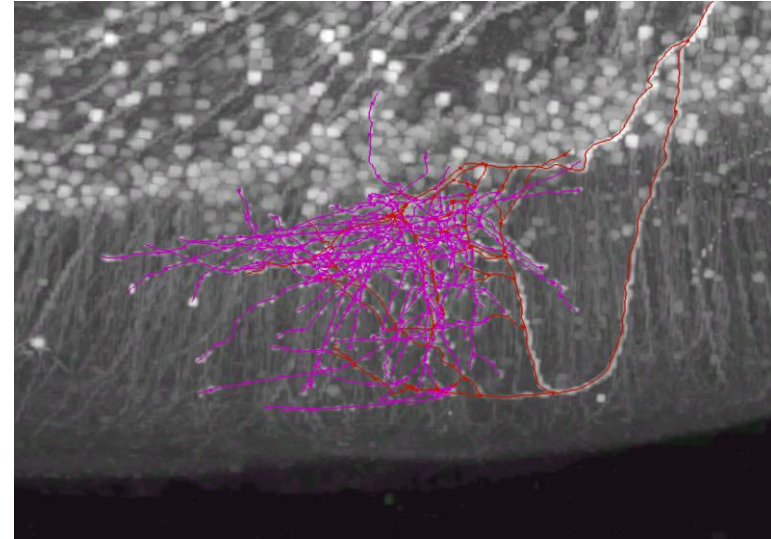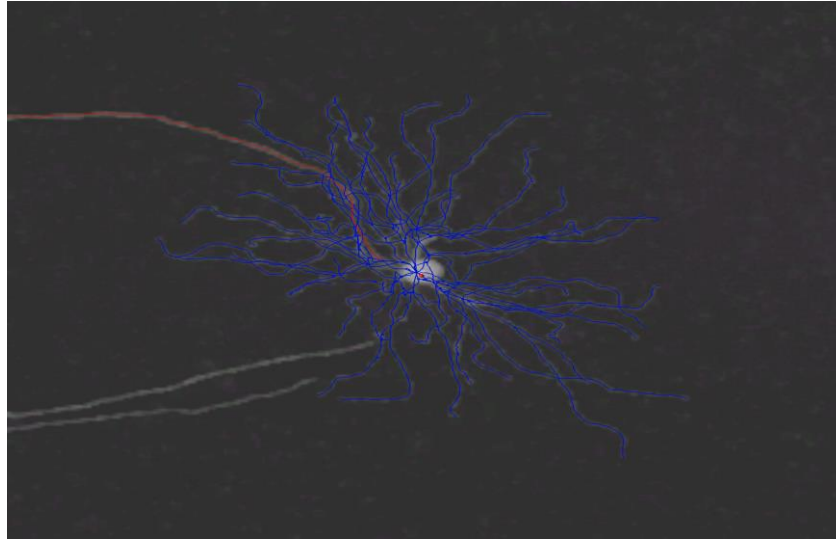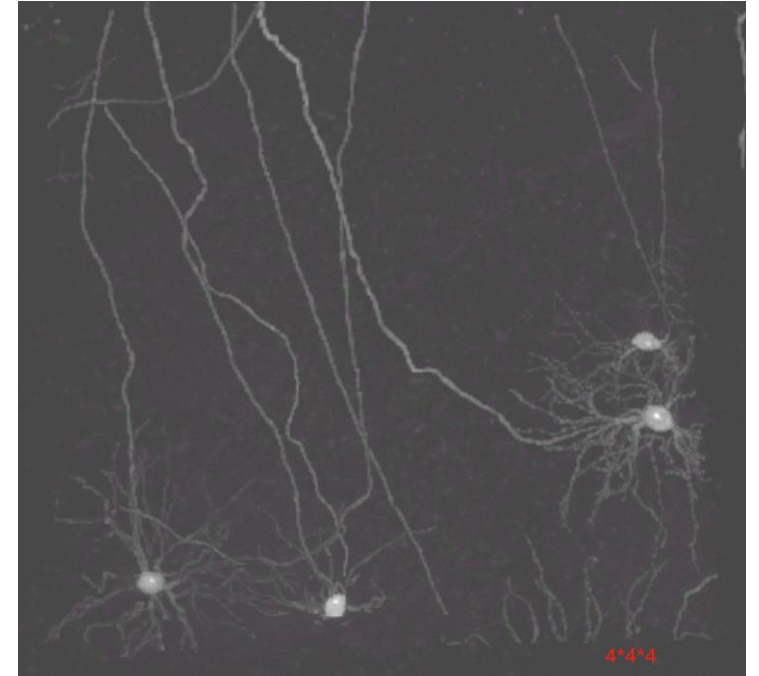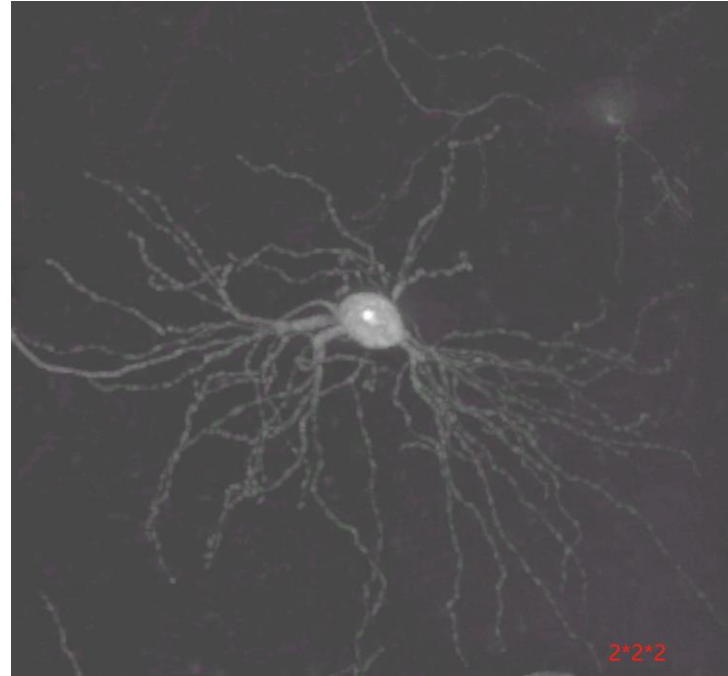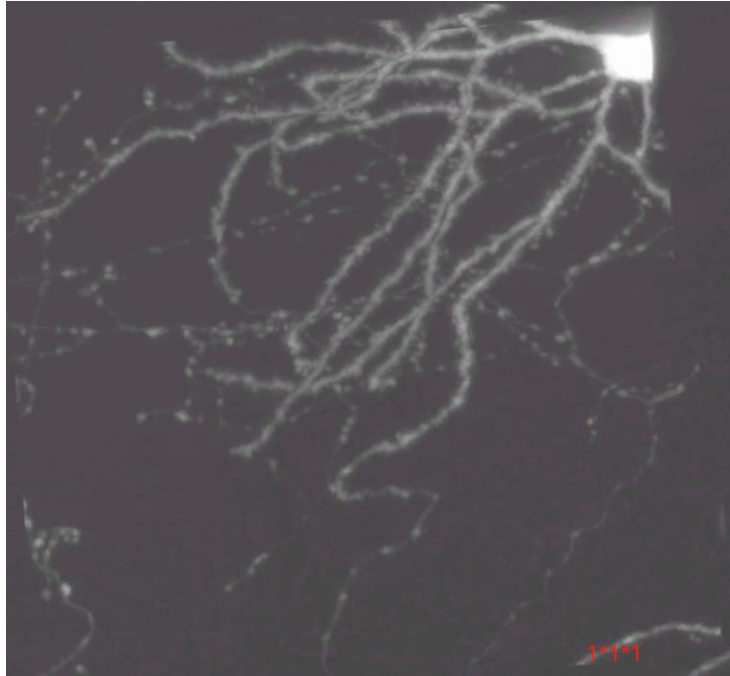
Local operation

Since the display under teraFly is performed block by block, tracing the whole neuron requires moving the block step by step, so we can also reconstruct block by block instead of tracing one branch by one branch. In this case It will save time even more.
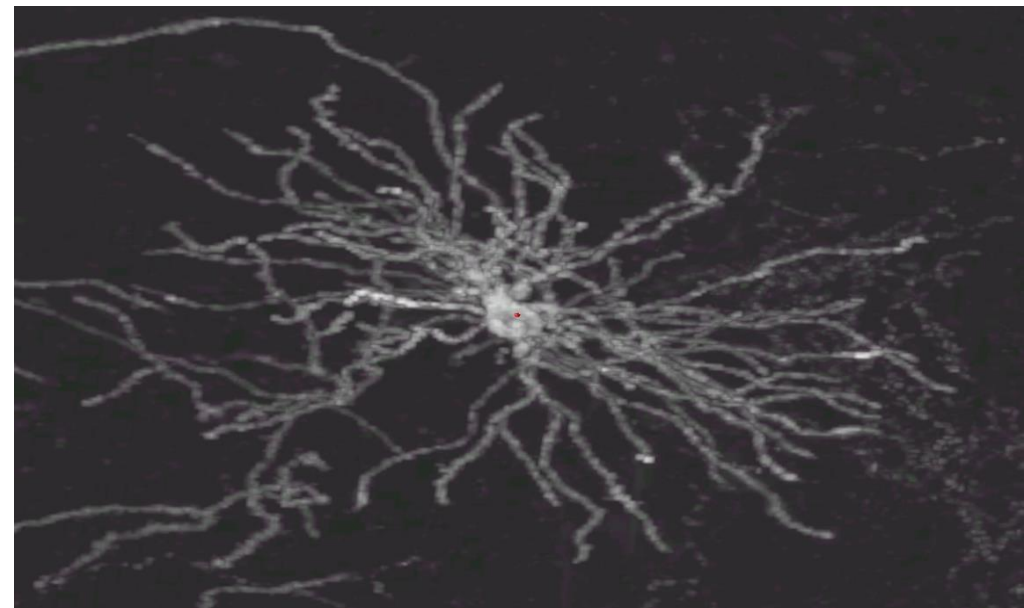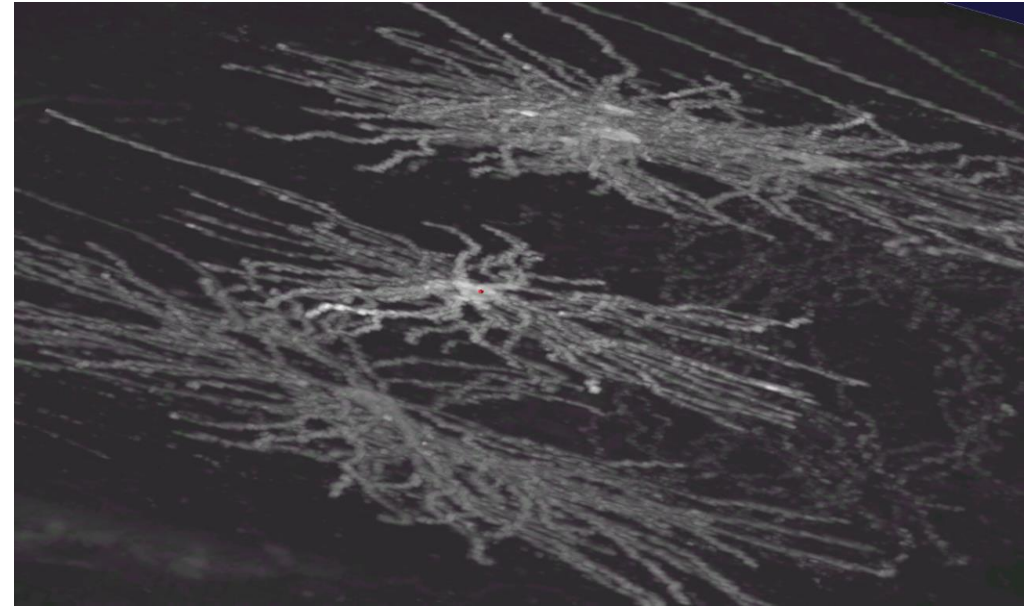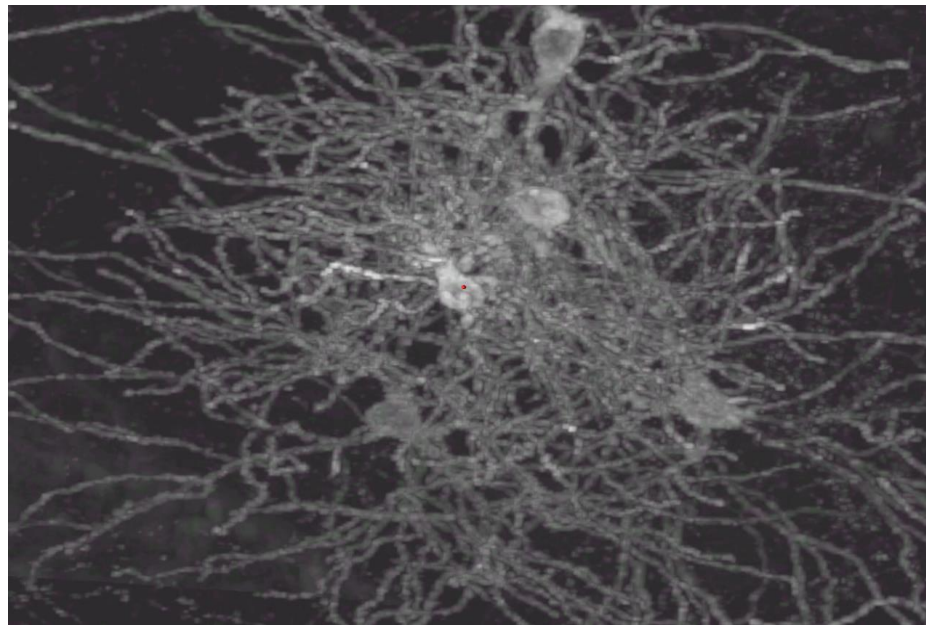
Flexibly switching resolutions

Taking into account the problem of signal bonding, we use three resolutions: the top three highest resolution in our operation.
The highest resolution is used for reconstruction when the signal is weak or dense; the sub-high resolution operation is selected in the sparse position; the lower resolution reconstruction is preferred when the signal is strong and the interference is small. This can also save time and improve efficiency.
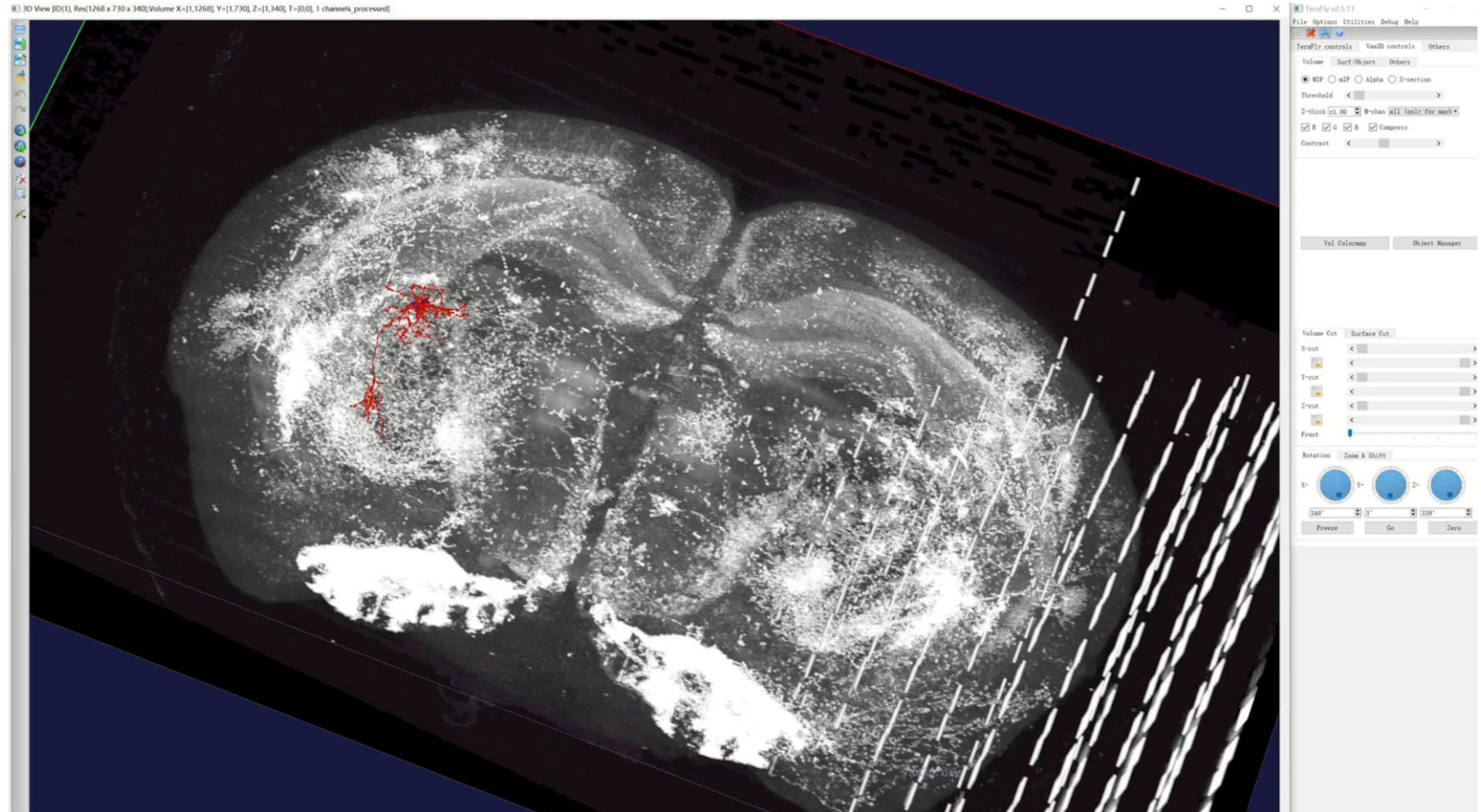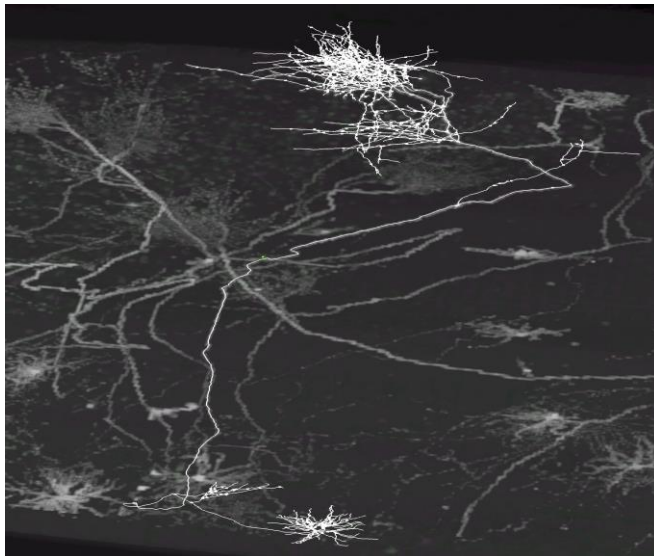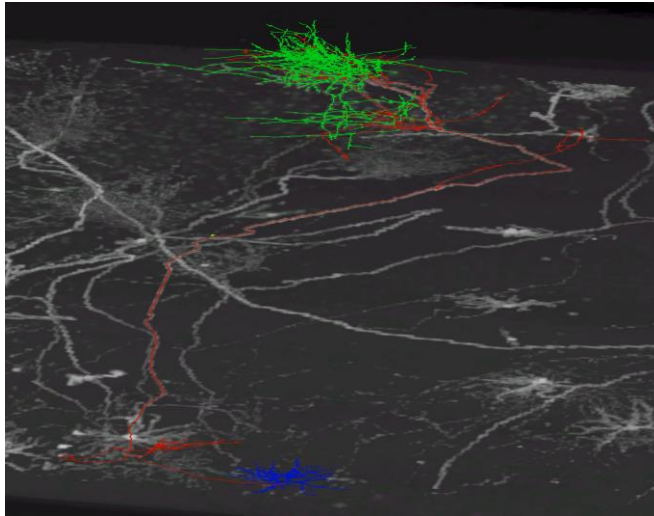
CUT

Make good use of Cut. When the neuron signals are entangled and interfered by other neurons, using the Cut function can help to hide the interference, so that you can clearly observe the neuron.
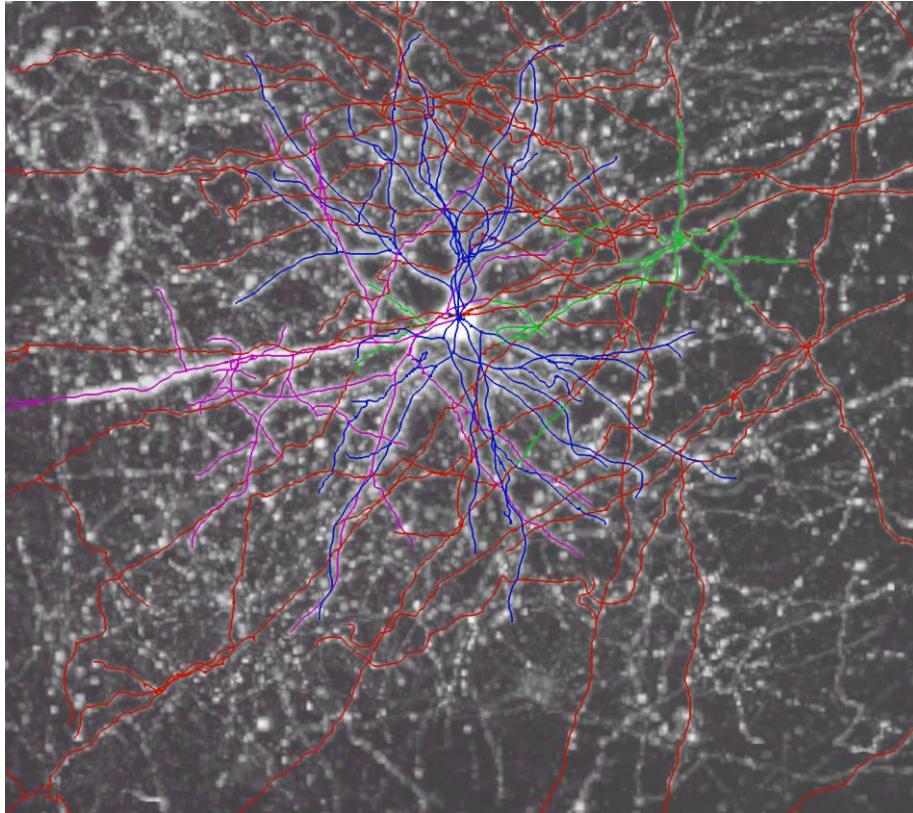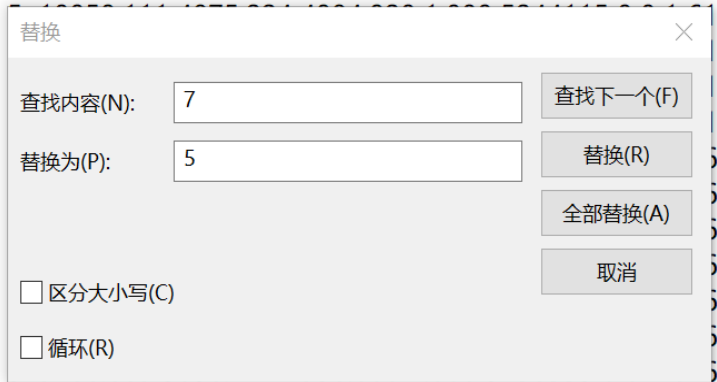
Alt+N

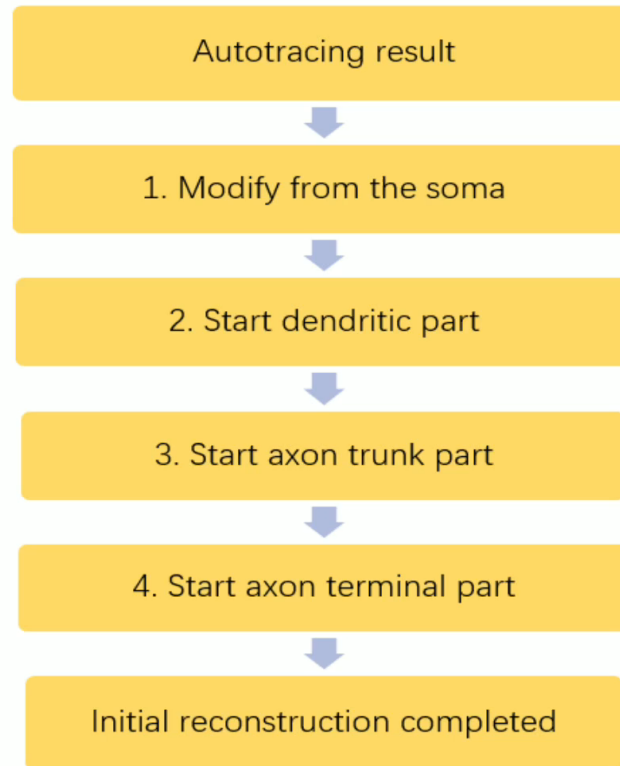Quickly discover whether there are breakpoints in neurons.

Text editing

Use text editing at the right time. For example, if we want to change the multiple colors at one time, we can use text editing to achieve the desired color conveniently and quickly.

The whole process of reconstruction

Thanks