

MyAMI, Florida

We ♥ Appion

- Allows newcomers to be productive while learning processing
- Gradual introduction to very complicated process
- Hope we can continue to emphasize coarse grained approach. Not depend overly much on webtools.

Some suggestions

- **Leginon**

- ACE truly in python using numpy scipy (i.e. not a wrapper)
 - get rid of matlab requirement, and can be used in Leginon for Zemlin plot
- support for TEM and EFTEM modes
 - support for two Gatan cameras on same scope
 - Currently I have to do a hack where I make EFTEM and GatanGIF two separate instruments
- Have pixel sizes tied to keV

Some suggestions

- Appion
 - random conical improvements for Titan
 - all programs seem to use Y-axis as default for tilt-axis
 - why not query db for tilt axis?
 - maybe have a default tilt axis in db like we do with Cs
 - wrap EMAN2
 - automated filament picker
 - helical reconstruction (single particle method)
 - xmipp tomo utilities
 - subvolume align and classify
 - protomo improvements and subvolume utilities
 - handedness!

Thoughts on parallelism

- Single particle processing has parts that are extremely parallelizable and parts that are poorly parallelizable
 - Projection matching/Euler search - extremely ||
 - Reconstruction - poorly ||
- `runfrealign.py`
 - I prototyped this program to expand to limits of HPC for Euler search and contract to single node for reconstruction
 - For example - 256 single proc jobs maximized use of resources and throughput

What I can work on

- Protomo
 - Had a meeting with Hanspeter Winkler to discuss things he would like to implement/change
 - Can prototype subvolume processing
 - Already have some command line tools that I'd like to implement
- Or whatever else seems most productive

Questions

- Python 3?
- Have you considered rewriting proc2d/3d in numpy/scipy?
 - This shouldn't be too hard
 - Would have some big advantages