SOFTWARE INSTALATION GUIDE

1. Install python 3.7 or higher. I prefer to install it as stand alone.
   1. During installation, choose Custom installation. Them place your Python in new folder. I created one called **c:\python3.8.**
   2. Be sure to Install 64 bit version if your computer is 64 bit
   3. Be sure to add python to system path when asked.
2. Install pygame.
   1. Type cmd in windows search bar at bottom left of screen
   2. In the pop-up command window, type: cd .. Enter, then cd .. Enter (yes, do it twice)
   3. Then cd c:\python3.8 (or whatever directory you used above)
   4. Then type: **pip install pygame**
3. Install numpy. Using CMD prompt as above in 2, type: **pip install numpy**
4. Install Thorlabs-apt. Using CMD prompt as above, type: **pip install Thorlabs-apt**
5. Install ThorLabs: <https://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=10285>
   1. Goto Kinessis Software tab, and press the Softwate Download button.
   2. choose 64 bit if your computer is 64 bit.
6. Go to Github and clone the Thorlabs\_apt depository. See <https://github.com/qpit/thorlabs_apt>
   1. In the download folder, extact all of the download.
   2. Then run the setup.py program using install as the only argument.
   3. That is, type: **python setup.py install**
7. Copy **G:\Shared drives\TNEL - UMN\Project related material\craniobot\APT.dll** into the Windows\System32 directory
8. Copy entire craniobot directory to your desktop. see G:\Shared drives\TNEL - UMN\Project related material\craniobot
9. Now you should be ready to use the craniobot application.

NOTE: Be sure to exit Craniobot using exit “X” on top right of window. If not, all motors will be locked out (that is, already in use). To fix this problem, run Thorlabs Kinesis software. Load all three motors. When all three alre loaded, unload all, then run Carniobot again.