# Movement Validation - Code Progress

| Repository | Language | Author(s) | Intended Aspect | Calculation Pipeline | | | | | | | | Other Components |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | Experiment | Video | Contour (aka "Machine Vision") | Pre-Features* (inc. Normalization) | Features | New Features** | Statistics | Fitness Function | GUI |
| SegWorm | Matlab | Yemini | real worms | performed by Laura Grundy | raw videos at Schafer Lab | yes | yes | yes | no | yes | no | yes |
| | | | | | | | | *validated* | | *validated* | | |
| SegWormMatlabClasses | Matlab | Hokanson | real worms | none performed | no | no | no | yes | no | yes | no | no |
| | | | | | *should be the same* | *not yet validated* | *not yet validated* | *nearly validated* | | *not yet validated* | | *not yet validated* |
| movement_validation | Python | Hokanson, Currie | real worms | none performed | raw videos on Stephen's Ext Hard Drive | **(Aaron working on this)** | **(Manuel working on this)** | yes | **(Adam Marblestone's Team looking at this)** | **(Michael working on this)** | **not yet** | **not yet** |
| | | | simulated worms | simulation on Geppetto | we have opted not to generate "video" | simulation "contour" from Geppetto | | | | | | |
| | | | | | | *Aaron working on comparing* | | *may be compared* | | | | |
| Track-A-Worm | Matlab | Wang, Wang | real worms | ?? | ?? | yes | ?? | yes | not applicable | ?? | ?? | ?? |

\* The original Yemini code stored simply-calculated features like width and skeleton along with the segmented contour, as a part of the machine vision step.  Here we show this as a separate step, since we will need to calculate these ourselves if we are supplied only contour data from Geppetto.  Also included here in the pre-features step is the reducing of the number of points lengthwise on the worm to just 49 (the "normalized" worm).

\*\* "New features" are totally new features not in the original Yemini code.  The movement_validation repository is open to academics who wish to add their own feature calculations, so some could add their own here.

Note: "yes" / "no" refers to whether that code component has been implemented.

Note: Bolded sections are areas we intend to complete.  Other areas, such as Pre-Features in SegWormMatlabClasses, are not intended to be implemented, and this shown by not bolding.

Note: Only the movement_validation repo is being actively worked on.  This is intended to be the finished product for use by scientists and by OpenWorm.