**Instructions for Use**

1. **Structure Name:** Input desired final structure name (note: no spaces in name)
2. **Select Trials**: Press button to select multiple trials in one folder
3. **Select Save Target**: Select Path for final save location
4. **Select Data**: Use checkbox tree to select data you would like to include in the structure
5. **Connect to Vicon**: Press button to connect. Vicon must be open and all open files saved. Connected when green light is showing, if there is an error the light will be red.
6. **Make Structure**: press to make structure. Status will be yellow during processing, and green once saved. Check command window if status is red.

**Major Component Description:**

The experiment’s data is saved in a MATLAB struct. The structure contains the continuous data from each trial. The sampling rate for the Streaming structure by data type is as follows:

* Joint Angles, Forces, Moments, Powers, Velocities - 100Hz
* Forceplates - 1000Hz

**Data.mat:**

Data.(Trial).(Subject).(dataType).(variable)

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| --- | --- |
| (Trial) = | TrialName: Name given to Trial in Vicon environment |
| (Subject) = | Subject: names of all active subjects at time of data exporting |
| (dataType) = | markers: Position of markers in global coordinates (unit: m)  jointAngles: Tracks the joint angle in three dimensions (unit: deg)   * Full documentation: <https://docs.vicon.com/pages/viewpage.action?pageId=50888880>   jointAngleVels: Tracks the joint angle velocity in three dimensions (unit: deg/s)   * Numerical derivative calculated from [Scheid, 1989]   jointForces: Tracks the resultant force at each joint (unit: N/kg)   * Full documentation: <https://docs.vicon.com/display/Nexus25/Plug-in+Gait+lower+body+forces+and+moments>   jointMoments: Tracks the moment (or Torque) about each joint (unit: N\*m/kg)   * Corrected to reflect the internal moment of the joint * Full documentation: <https://docs.vicon.com/display/Nexus25/Plug-in+Gait+lower+body+forces+and+moments>   jointPowers: The power output by the joint (unit: W/kg)   * Corrected to reflect the internal moment of the joint.   forceplates: Provides RAW force plate data from each leg; directions follow the local force plate frame.   * Force - (x (side to side), y (propulsive/braking), z (normal to ground)) (unit: N) * Moment -  moment (x/y/z) (unit: N\*m) * CoP - *global* center of pressure (x,y,z) (unit: mm)   events: Heel strike for left and right side (by frame) and velocity profiles for randomized protocol   * LHS/RHS -  heel strikes by frame * LTO/RTO -  toe off by frame |
| (variable) = | The final field for all data types. In general, results are given as streams of data, where each row is a new sample of the signal at its sampling rate, and each column represents a new dimension of the data if applicable. Where applicable, Columns 1, 2, 3 = Dimension x,y,z |

Emma Reznick Jun 2022

reznick@umich.edu