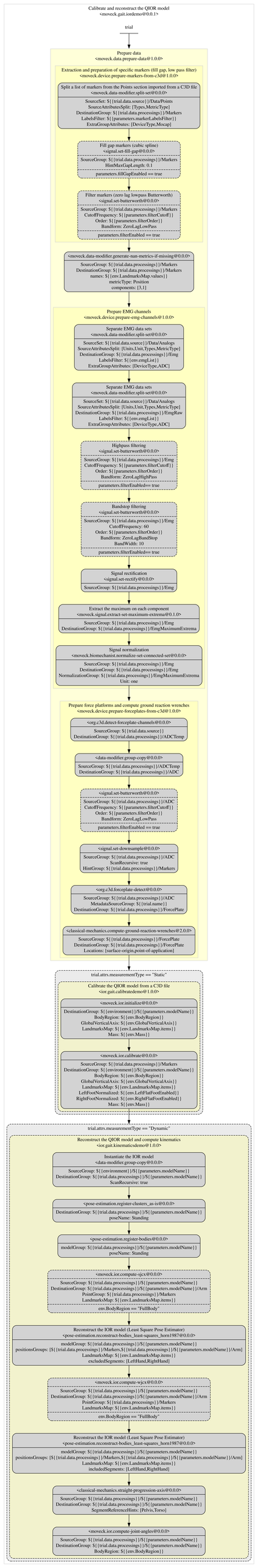
Calibrate and reconstruct the QIOR model
<moveck.gait.iordemo@0.0.1>
trial
Prepare data
<moveck.data.prepare-data@1.0.0>
Extraction and preparation of specific markers (fill gap, low pass filter)
<moveck.device.prepare-markers-from-c3d@1.0.0>
Split a list of markers from the Points section imported from a C3D file
<moveck.data-modifier.split-set@0.0.0>
SourceSet: ${ [trial.data.source] }/Data/Points
SourceAttributesSplit: [Types,MetricType]
DestinationGroup: ${ [trial.data.processings] }/Markers
LabelsFilter: ${ [parameters.markerLabelsFilter] }
ExtraGroupAttributes: [DeviceType,Mocap]
Fill gap markers (cubic spline)
<signal.set-fill-gap@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Markers
HintMaxGapLength: 0.1
parameters.fillGapEnabled == true
Filter markers (zero lag lowpass Butterworth)
<signal.set-butterworth@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Markers
CutoffFrequency: ${ [parameters.filterCutoff] }
Order: ${ [parameters.filterOrder] }
Bandform: ZeroLagLowPass
parameters.filterEnabled == true
<moveck.data-modifier.generate-nan-metrics-if-missing@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Markers
DestinationGroup: ${ [trial.data.processings] }/Markers
names: ${ [env.LandmarksMap.values] }
metricType: Position
components: [3,1]
Prepare EMG channels
<moveck.device.prepare-emg-channels@1.0.0>
Separate EMG data sets
<moveck.data-modifier.split-set@0.0.0>
SourceSet: ${ [trial.data.source] }/Data/Analogs
SourceAttributesSplit: [Units,Unit,Types,MetricType]
DestinationGroup: ${ [trial.data.processings] }/Emg
LabelsFilter: ${ [env.emgList] }
ExtraGroupAttributes: [DeviceType,ADC]
Separate EMG data sets
<moveck.data-modifier.split-set@0.0.0>
SourceSet: ${ [trial.data.source] }/Data/Analogs
SourceAttributesSplit: [Units,Unit,Types,MetricType]
DestinationGroup: ${ [trial.data.processings] }/EmgRaw
LabelsFilter: ${ [env.emgList] }
ExtraGroupAttributes: [DeviceType,ADC]
Highpass filtering
<signal.set-butterworth@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Emg
CutoffFrequency: ${ [parameters.filterCutoff] }
Order: ${ [parameters.filterOrder] }
Bandform: ZeroLagHighPass
parameters.filterEnabled== true
Bandstop filtering
<signal.set-butterworth@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Emg
CutoffFrequency: 60
Order: ${ [parameters.filterOrder] }
Bandform: ZeroLagBandStop
BandWidth: 10
parameters.filterEnabled== true
Signal rectification
<signal.set-rectify@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Emg
Extract the maximum on each component
<moveck.signal.extract-set-maximum-extrema@0.1.0>
SourceGroup: ${ [trial.data.processings] }/Emg
DestinationGroup: ${ [trial.data.processings] }/EmgMaximumExtrema
Signal normalization
<moveck.biomechanist.normalize-set-connected-set@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Emg
DestinationGroup: ${ [trial.data.processings] }/Emg
NormalizationGroup: ${ [trial.data.processings] }/EmgMaximumExtrema
Unit: one
Prepare force platforms and compute ground reaction wrenches
<moveck.device.prepare-forceplates-from-c3d@1.0.0>
<org.c3d.detect-forceplate-channels@0.0.0>
SourceGroup: ${ [trial.data.source] }
DestinationGroup: ${ [trial.data.processings] }/ADCTemp
<data-modifier.group-copy@0.0.0>
SourceGroup: ${ [trial.data.processings] }/ADCTemp
DestinationGroup: ${ [trial.data.processings] }/ADC
<signal.set-butterworth@0.0.0>
SourceGroup: ${ [trial.data.processings] }/ADC
CutoffFrequency: ${ [parameters.filterCutoff] }
Order: ${ [parameters.filterOrder] }
Bandform: ZeroLagLowPass
parameters.filterEnabled == true
<signal.set-downsample@0.0.0>
SourceGroup: ${ [trial.data.processings] }/ADC
ScanRecursive: true
HintGroup: ${ [trial.data.processings] }/Markers
<org.c3d.forceplate-detect@0.0.0>
SourceGroup: ${ [trial.data.processings] }/ADC
MetadataSourceGroup: ${ [trial.name] }
DestinationGroup: ${ [trial.data.processings] }/ForcePlate
<classical-mechanics.compute-ground-reaction-wrenches@2.0.0>
SourceGroup: ${ [trial.data.processings] }/ForcePlate
DestinationGroup: ${ [trial.data.processings] }/ForcePlate
Locations: [surface-origin,point-of-application]
trial.attrs.measurementType == "Static"
Calibrate the QIOR model from a C3D file
<ior.gait.calibratedemo@1.0.0>
<moveck.ior.initialize@0.0.0>
DestinationGroup: ${ [environment] }/${ [parameters.modelName] }
BodyRegion: ${ [env.BodyRegion] }
GlobalVerticalAxis: ${ [env.GlobalVerticalAxis] }
LandmarksMap: ${ [env.LandmarksMap.items] }
Mass: ${ [env.Mass] }
<moveck.ior.calibrate@0.0.0>
SourceGroup: ${ [trial.data.processings] }/Markers
DestinationGroup: ${ [environment] }/${ [parameters.modelName] }
BodyRegion: ${ [env.BodyRegion] }
GlobalVerticalAxis: ${ [env.GlobalVerticalAxis] }
LandmarksMap: ${ [env.LandmarksMap.items] }
LeftFootNormalized: ${ [env.LeftFlatFootEnabled] }
RightFootNormalized: ${ [env.RightFlatFootEnabled] }
Mass: ${ [env.Mass] }
trial.attrs.measurementType == "Dynamic"
Reconstruct the QIOR model and compute kinematics
<ior.gait.kinematicsdemo@1.0.0>
Instantiate the IOR model
<data-modifier.group-copy@0.0.0>
SourceGroup: ${ [environment] }/${ [parameters.modelName] }
DestinationGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
ScanRecursive: true
<pose-estimation.register-clusters_as-is@0.0.0>
DestinationGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
poseName: Standing
<pose-estimation.register-bodies@0.0.0>
modelGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
poseName: Standing
<moveck.ior.compute-sjcx@0.0.0>
SourceGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
DestinationGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }/Arm
PointGroup: ${ [trial.data.processings] }/Markers
LandmarksMap: ${ [env.LandmarksMap.items] }
env.BodyRegion == "FullBody"
Reconstruct the IOR model (Least Square Pose Estimator)
<pose-estimation.reconstruct-bodies_least-squares_horn1987@0.0.0>
modelGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
positionsGroups: [${ [trial.data.processings] }/Markers,${ [trial.data.processings] }/${ [parameters.modelName] }/Arm]
LandmarksMap: ${ [env.LandmarksMap.items] }
excludedSegments: [LeftHand,RightHand]
<moveck.ior.compute-wjcx@0.0.0>
SourceGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
DestinationGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }/Arm
PointGroup: ${ [trial.data.processings] }/Markers
LandmarksMap: ${ [env.LandmarksMap.items] }
env.BodyRegion == "FullBody"
Reconstruct the IOR model (Least Square Pose Estimator)
<pose-estimation.reconstruct-bodies_least-squares_horn1987@0.0.0>
modelGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
positionsGroups: [${ [trial.data.processings] }/Markers,${ [trial.data.processings] }/${ [parameters.modelName] }/Arm]
LandmarksMap: ${ [env.LandmarksMap.items] }
includedSegments: [LeftHand,RightHand]
<classical-mechanics.straight-progression-axis@0.0.0>
SourceGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
DestinationGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
SegmentReferenceHints: [Pelvis,Torso]
<moveck.ior.compute-joint-angles@0.0.0>
SourceGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
DestinationGroup: ${ [trial.data.processings] }/${ [parameters.modelName] }
BodyRegion: ${ [env.BodyRegion] }