

VISUAL3D™

SOFTWARE FOR 3D MOTION ANALYSIS

- ▶ REAL-TIME DATA ANALYSIS
- ▶ DATA MANAGEMENT
- ▶ PROCESSING HISTORY KEPT

Visual3D is used in:

Clinical Studies

- ▶ Gait Analysis
- ▶ Pre and Post Surgery
- ▶ Clinical Rehabilitation

Neuroscience

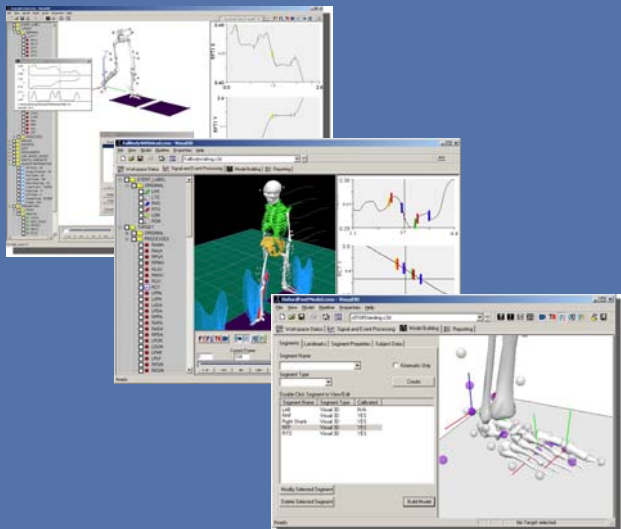
- ▶ Reach and Grasp
- ▶ Robotic Evaluation
- ▶ Animal Behavior
- ▶ Psychophysical Studies

Sports

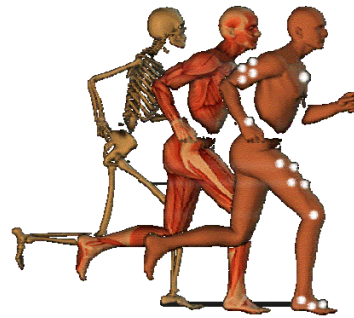
- ▶ Training
- ▶ Research
- ▶ Injury Assessment
& Prevention

Ergonomics

Industrial Processes
And much more...



Proven in scientific and clinical research labs world-wide, **Visual3D™** is the world's leading and most advanced software solution for rigorous and accurate 3D biomechanical motion analysis (kinematics and kinetics).



Visual3D Basic/RT™ Key Features...

- ▶ Flexible Modeling - Global Optimization, 6 DOF, Helen Hayes, Virtual Markers, and more
- ▶ Kinematics, Kinetics (Inverse Dynamics)
- ▶ Integrate Analog Data: AMTI Stairs, Instrumented Treadmills, Force Plates, EMG, and more...
- ▶ Comprehensive Reporting and Graphing
- ▶ Workflow Automation and Pipeline Processing
- ▶ Real-Time Streaming and Data Capture*
- ▶ Keeps a history of all processing steps on the data
- ▶ 3D Digitizing Pointer
- ▶ Functional Joint Centers

Visual3D Professional™ Also Includes...

- ▶ Real-Time analysis, biofeedback, and RT pipeline
- ▶ Enhanced data management functionality
- ▶ Induced Acceleration Analysis
- ▶ CalTester Software

*Hardware must support RT data buffering for capture to work

VISUAL3D™

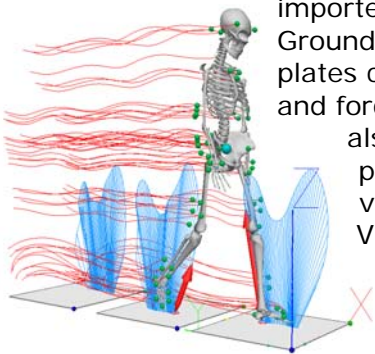
REAL-TIME 3D MOTION ANALYSIS

Save Time and Money

- ▶ Automate the analysis and reporting
- ▶ Real time validation of data
- ▶ Custom marker sets and virtual markers—use what works best
- ▶ Rapid model development with Functional Joint calculations and Global Optimization
- ▶ Integrated model builder, reporting systems, and analytical tools
- ▶ Digitizing Pointers supported for virtual instead of physical markers for awkward locations

Collaborate — Data can be shared between any location, regardless of systems used. All data processing changes are saved for historical tracking. Visual3D can use the open c3d standard for data input.

Visualize Data — The visualization of motion data can be shown as skeletons, mannequins or user-defined animations that have been imported from external software. Ground reaction forces from force plates can be shown as vector arrows and force butterflies. EMG signals can also be visualized. The presentation of synchronized video is also possible within Visual3D.



Hardware Independent – Visual3D processes standard c3d files, ASCII, and custom inputs. Analog data (force plates, EMG, EEG, etc) can be integrated and processed with the motion capture data.

Supported Motion Capture Systems

- ▶ Qualisys
- ▶ Northern Digital
- ▶ Codamotion
- ▶ Motion Analysis
- ▶ Vicon
- ▶ Organic Motion
- ▶ Phoenix Technologies
- ▶ Innovisions MaxTRAQ Video
- ▶ BTS
- ▶ Polhemus
- ▶ many others...

Developed By



FEATURES

Data and Signal Processing

- ▶ Reads open standard c3d files
- ▶ Automatic gait event identification
- ▶ Compatible with all previous versions
- ▶ Plug-ins convert data into c3d
- ▶ Optimal Tracking of 3D Segments
- ▶ Custom event identification
- ▶ Real-Time Streaming & Analysis
- ▶ QuickView of graphs and data
- ▶ EMG Analysis
- ▶ Define metrics, thresholds, filters
- ▶ Integration with Matlab™
- ▶ Scripting and workflow automation
- ▶ Synchronized Video playback
- ▶ Recorded forces and moments can be applied to any segment

Model Builder

- ▶ 6 degree of freedom segments
- ▶ Marker cluster support
- ▶ Helen Hayes/Newington/VCM support
- ▶ Orthotrak support
- ▶ Landmarks/Virtual markers
- ▶ Virtual Calibration Markers
- ▶ Virtual Segments
- ▶ Muscle Attachments
- ▶ Multi-segmented feet and hands
- ▶ Hybrid model flexibility
- ▶ Automatic (dynamic) model building
- ▶ Pipeline customization of models
- ▶ Joint forces, angles, moments, etc.

Reporting

- ▶ Graphing Kinetics and Kinematics
- ▶ Selective range reporting
- ▶ Statistical analysis
- ▶ Pipeline automation
- ▶ Templates for reuse
- ▶ Export BMP, AVI, and SVG
- ▶ Consistent with Move3D™ and VCM™



Options

- ▶ Student Versions
- ▶ Davis Digitizing Pointer

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