

Expert Quick Brief

SANTOS FOR LEGAL & EXPERT WITNESS APPLICATIONS

WHAT SANTOS DOES

Santos is a high-fidelity digital human simulation platform that enables expert witnesses to **quantify biomechanical forces**—including joint torques, muscle forces, and body kinematics—associated with injury scenarios such as falls, vehicle collisions, lifting events, and product interactions. It is not simply a biomechanics simulation program, but it is predictive.

THE PROBLEM IT SOLVES

- In many injury cases, causation opinions rely on **qualitative descriptions** of motion and force.
- Santos provides a physics-based framework to **quantitatively evaluate those forces**, strengthening expert opinions with measurable, defensible analysis.

WHAT YOU GET

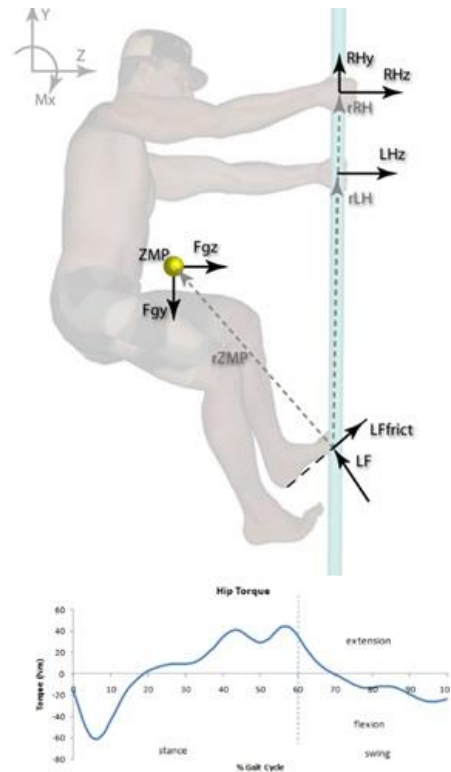
Using case-specific inputs (e.g., posture, motion, environment), Santos produces:

- Joint forces and torques (spine, shoulder, knee, etc.)
- Muscle activation and internal loading estimates
- Full-body kinematics and motion reconstruction
- Visual outputs suitable for expert reports and courtroom presentation

HOW IT FITS INTO YOUR WORK

Santos is not a replacement for your expertise—it is a **supporting analytical tool** that:

- Enhances biomechanical and injury causation opinions.
- Bridges accident reconstruction and medical testimony. It is not an FEA tool.
- Provides quantitative support for deposition and trial.
- Improves clarity through visual, jury-friendly exhibits



EXAMPLE USE CASE

Slip and Fall → Lumbar Spine Loading

A fall scenario is constructed using reported motion and environmental conditions.

Santos computes lumbar spine compression and shear forces during impact.

Result: Quantified loads can be compared to established injury thresholds, supporting or challenging causation claims.

WHY IT MATTERS IN LITIGATION

- Strengthens defensibility of expert opinions
- Adds measurable support beyond narrative explanation
- Improves communication with judges and juries

- Differentiates your analysis from other experts

VALIDATION & ADMISSIBILITY

Santos is grounded in established biomechanics and engineering principles and has been developed and refined through extensive academic research at the University of Iowa.

The methodology aligns with considerations outlined in Daubert v. Merrell Dow

Pharmaceuticals, including:

- Testable and physics-based modeling framework
- Foundation in peer-reviewed scientific literature
- Transparent assumptions and inputs
- Capability for sensitivity and uncertainty analysis

HOW TO ENGAGE

We offer a **pilot case collaboration**, where Santos is applied to one of your current or past cases. Deliverables include:

- Simulation results and quantitative outputs
- Visual exhibits for reporting and testimony
- Summary interpretation aligned with your analysis

NEXT STEP

We would welcome a brief discussion to demonstrate a real case example and explore how Santos can support your work.

CONTACT US

Karim Abdel-Malek, PhD

CEO

iHuman Technology Corporation

Karim.malek@iHumanTechnology.com