

Hip Analysis Suite

Automated Diagnostic and Preoperative Software

Virginia Commonwealth University researchers have developed an automated software package that provides 3D models and morphometric analysis of the femur and pelvis based off of a patient's CT scan. Current methods for preoperative imaging rely solely on 2D imaging, and can lead to differences between model and patients. Doctors use these models to diagnose ailments as well as to aid in the hip replacement surgery operation. Using this software package, doctors or surgeons can build more accurate pre-operative hip models to increase hip replacement surgery success rates. In addition, the system can provide relevant data for diagnosis of hip conditions.

Benefits

- » Improved surgical success rates
- » Increase Pre-operative information
- » Increase hip ailment diagnosis

Applications

- » Diagnosing hip conditions
- » Add to CT scan visualization usability
- » Surgery Preparation

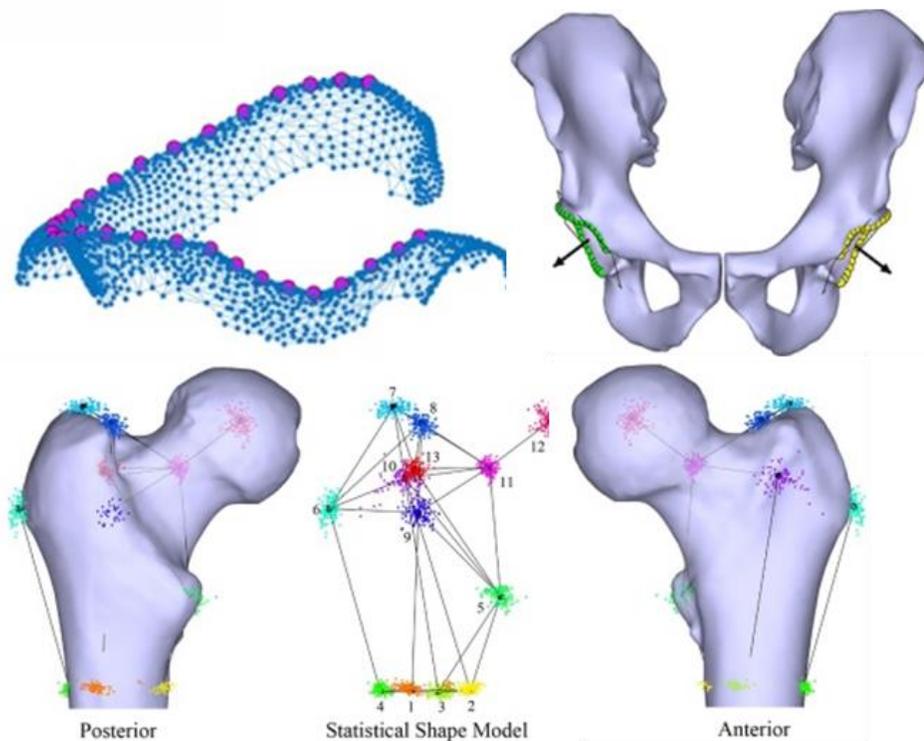


Figure 1: Sample modeling and statistical analysis of the hip and the femur produced by the automated software

The Technology

Patients undergoing treatment for hip disease or replacements generally depend on 2-Dimensional models to get accurate treatment. This process can lead to human error by the technician or surgeon and reduce likelihood of healthy patient outcome. The guidelines are based on published research and help therapists in making treatment decisions. VCU's novel algorithm uses hundreds of landmarks to accurately estimate and model the femur and pelvis of each individual patient.

Hip angle and size measurements are critical to hip replacement surgery success, and improper placement leads to abnormal biomechanical function. In addition, many patients needing hip surgeries have abnormal orientations. Using this novel application can lead to the reduction in inadequate estimations; provide clearer and safer diagnosis of hip injuries or diseases. The application of this program could lead to increased success rates and reduce healthcare costs overall for hip replacement surgeries. VCU is seeking market insight on commercialization of this novel data collection system. We welcome interest from potential partners and licensees.

Additional information

Patent status:

Patent Pending; U.S. and foreign rights available

License status:

This technology is available for licensing to industry for further development and commercialization

Category:

Physical Therapy; Surgery

VCU Tech #:

18-001

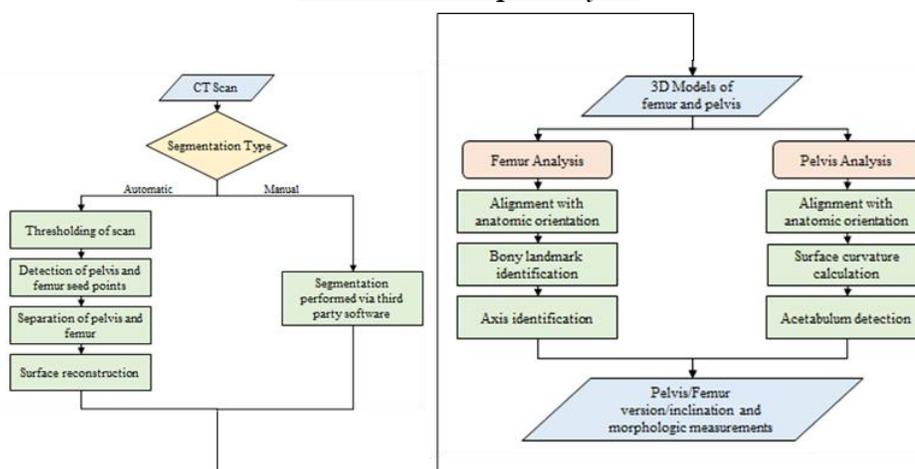
Investigators:

Jennifer Wayne, PhD.

Contact us about the technology

Brent Fagg, MS
Technology Manager
bfagg@vcu.edu
(804) 827-2211

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VCU Innovation Gateway is responsible for commercializing VCU research. We are committed to enhancing the overall culture of innovation and entrepreneurship at VCU and contributing to the growth of the region's innovation ecosystem. This broader mission fosters collaborations with local and prospective companies to build external support for our inventors, and grows an entrepreneurial population to help us commercialize our technologies through new venture creation and thus support economic growth of our region.

VCU Innovation Gateway
Virginia Commonwealth University
800 E. Leigh St., Suite 3000
Box 980568
Richmond, VA 23298-0568

research.vcu.edu/ott
ott@vcu.edu (804)
828-5188