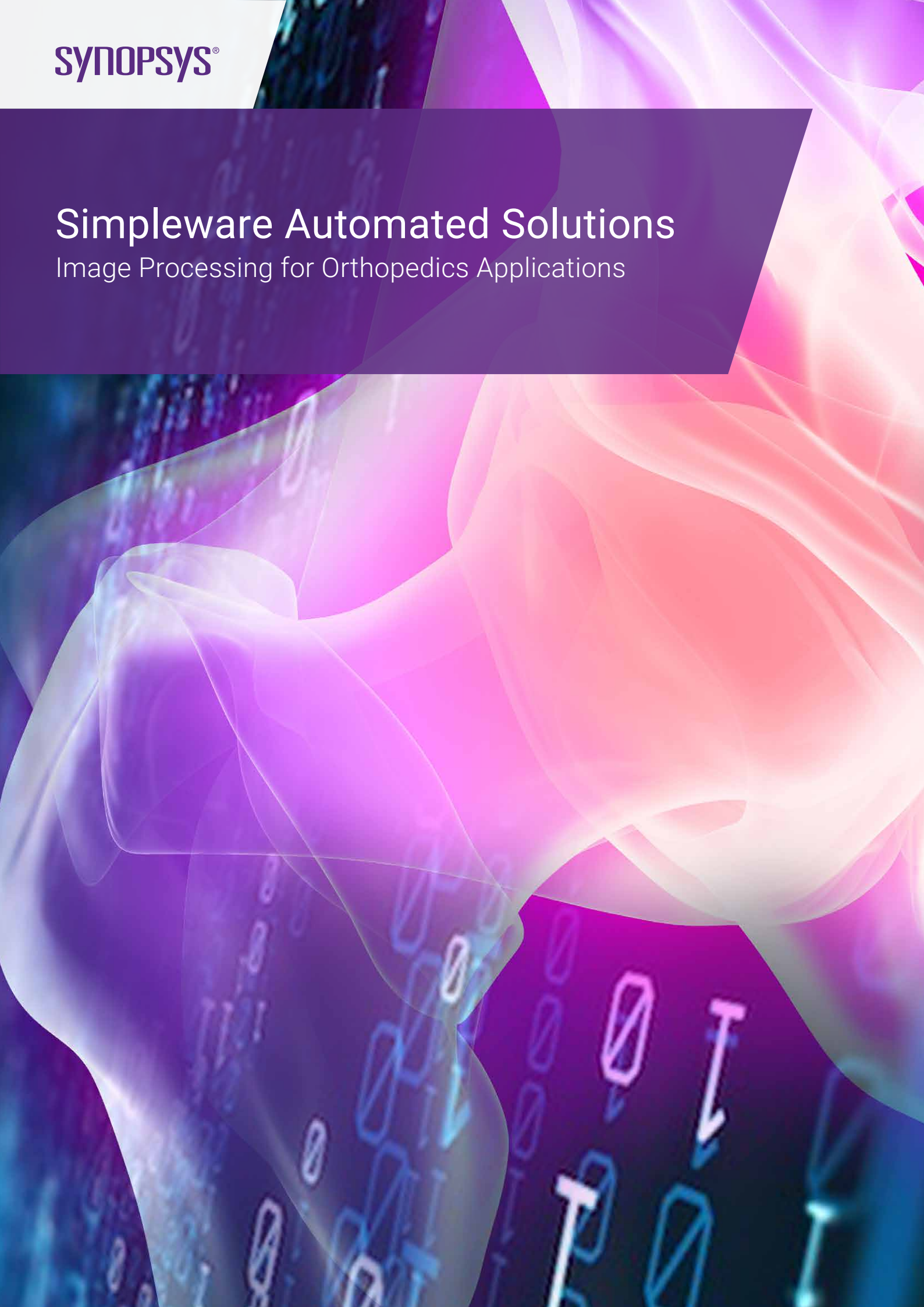# Simpleware Automated Solutions

Image Processing for Orthopedics Applications

# Simpleware Automated Solutions

## Less Segmentation…
## More Innovation

- Reduce time spent on tedious manual segmentation
- Free up engineering time for more complex and high-value tasks
- Use Simpleware automated solutions to accelerate your image to model workflow

**Example dataset: good quality MRI scan of a knee**

| | |
|---|---|
| Novice user: | 3 hours |
| Intermediate skill user: | 1.5 hours |
| Expert user: | 40 minutes |
| Simpleware AS Ortho: | 2 minutes (or faster) |

## Achieve Consistent
## and Reliable Results

- Simpleware automated solutions are powered by AI technology using Machine Learning (ML) algorithms
- Simpleware ML algorithms are trained by experts in 3D image segmentation for hundreds of hours
- Segmented anatomies and landmarks are meticulously reviewed, ensuring precise and reliable results
- Eliminate inconsistencies between different users and datasets, reducing the need for multiple reviews
- Shorten the learning curve for new technicians and engineers

## Efficiently Process
## Large Numbers of Datasets

- Simpleware automated solutions allow you to scale up quickly and easily
- Process large batches of data 20-50 times faster, whilst achieving highly consistent results
- Reducing time on manual segmentation frees up engineering time for more complex tasks
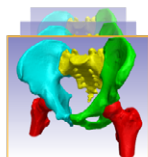


Simpleware Automated Solutions → Quality Assurance → Automated Analysis & Reporting → Optimized Product Design → More Time for Innovation
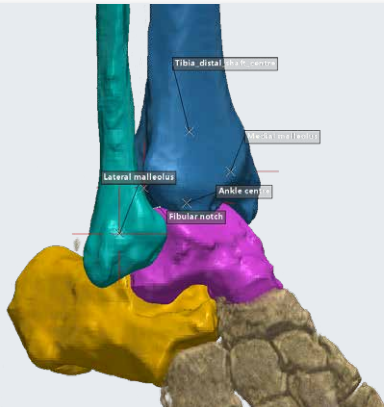
# Anatomy-Specific Automated Segmentation

## Simpleware AS Ortho (Auto Segmenter for Orthopedics)

Simpleware AS Ortho provides patient-specific automated segmentation tools for Ankles, Hips, Knees, and Shoulders. It segments the chosen bones and/or cartilage as well as identifying common landmarks in 1-3 minutes using a standard engineering laptop.
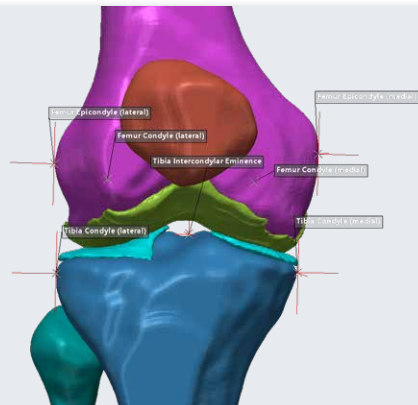


## Ankle CT

- Suitable for use on CT scans
- Parts segmented: Talus, Calcaneus, Tibia, Fibula
- Landmarks placed on: Ankle Center, Fibular Notch, Lateral and Medial Malleolus
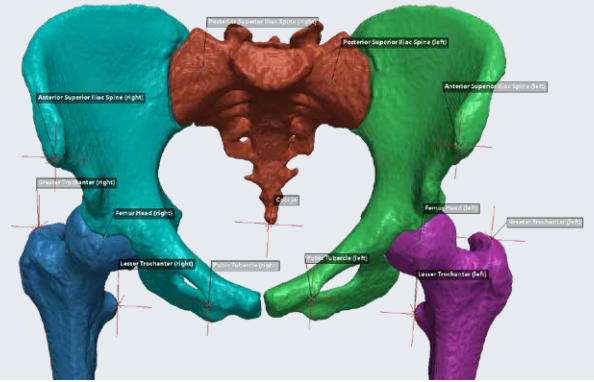


## Hip CT

- Suitable for use on CT scans
- Parts segmented: Promixal Femurs, Pelvis, Sacrum
- Landmarks placed on: Pelvis, Coccyx, and Femurs



## Knee CT & MRI

- Suitable for CT scans (Knee CT) and PD weighted, T1 Coronal and T2 Sagittal MRI scans (Knee MRI)
- Parts segmented: Femur, Tibia, Fibula, Patella, Fabella (only CT), and associated cartilage (only MRI)
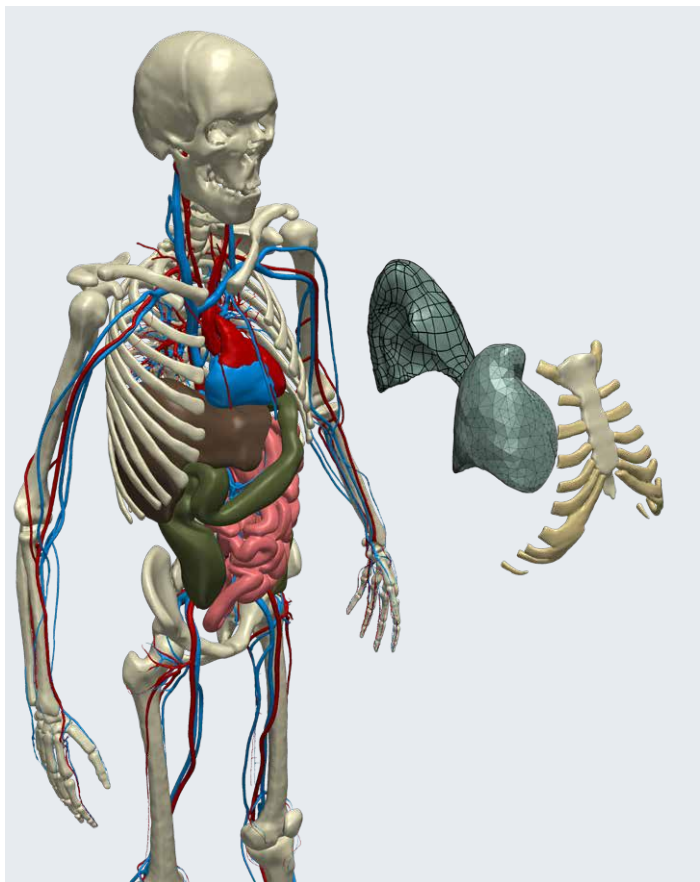- Landmarks placed on Femur, Tibia (both), Patella, and Fibula (only CT)
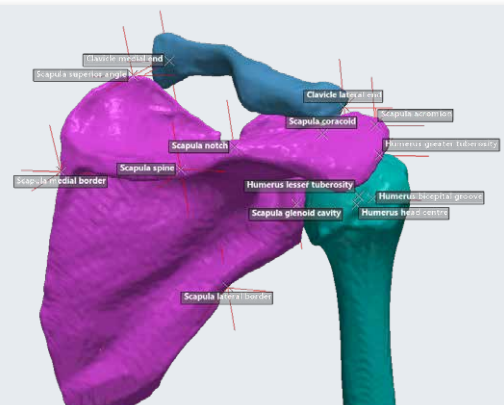


## Shoulder CT

- Suitable for use on CT scans
- Parts segmented: Humerus, Scapula and Clavicle
- Landmarks placed on: Humerus, Scapula and Clavicle

Please note: Simpleware AS Ortho requires a hardware specification with a NVIDIA graphics card with a minimum of 4GB of video memory.

# Working with Different Anatomies?

## Customized AI/ML Solutions with Simpleware Custom Modeler



Simpleware Custom Modeler is an automated solution purpose-built for your needs using problem-specific data and techniques. Harness the power of Simpleware software and our expert engineering knowledge by working with our team to create a tailored solution for your current processes.

**In addition to automated segmentation, your custom solution can include fully automated:**

- Image processing (such as noise reduction, smoothing, or artefact reduction)
- Landmarking
- Measurements and statistics
- Report generation
- Models meshed and ready for 3D printing, CAD or simulation
- And much more...

**Want to know more?**

Show us your current process and work with our engineers to fulfill your requirements and create a perfect solution.

For more information, go to **www.synopsys.com/simpleware**

Email: **simpleware@synopsys.com**

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