Solving the AI data problem in medical X-ray imaging
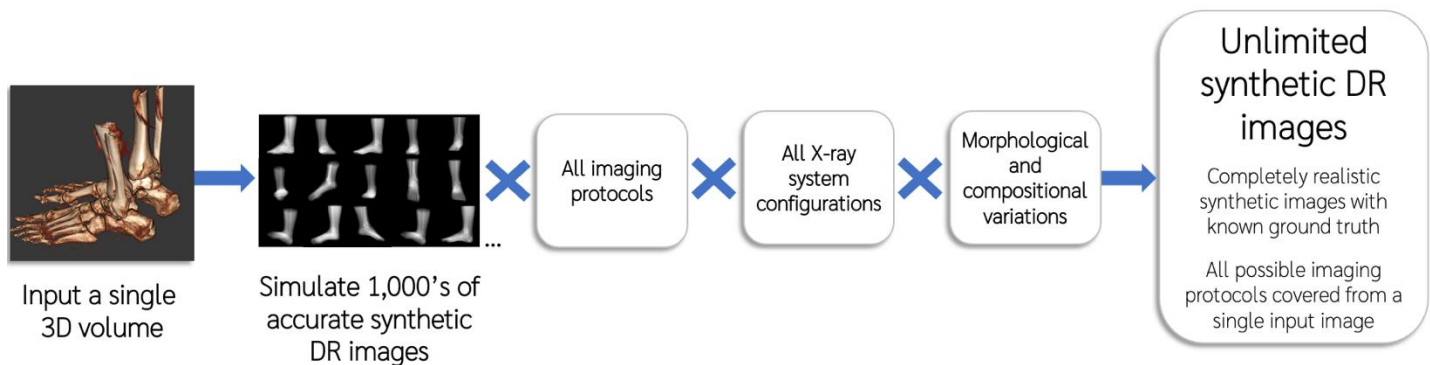
IBEXTrueview®

X-ray simulator

Don't let restricted access to clinical data slow down your AI product development

Does this sound familiar?

You have a new idea for a technique or product to improve the patient outcomes in a particular application in medical imaging. You need data to test this idea but don't have the time or resources to access large volumes of clinical data.

You should use IBEX Trueview® synthetic X-ray data

Input a single 3D volume ✕ Simulate 1,000's of accurate synthetic DR images ✕ All imaging protocols ✕ All X-ray system configurations ✕ Morphological and compositional variations → **Unlimited synthetic DR images** — Completely realistic synthetic images with known ground truth. All possible imaging protocols covered from a single input image

Validate ideas with synthetic data before time-consuming and expensive clinical studies.

- Input a single 3D volume of the chosen body part
- Specify the population demographic
- Configure the X-ray system in any way you wish
- Quickly generate a huge dataset to train your algorithms

Delivering high value for AI developers

- No red-tape or regulatory barriers
- Develop new product concepts without the need for large clinical datasets
- Validate the clinical and commercial business case before expensive clinical trials
- Train your AI for all system types and protocol variations
- Extend limited datasets to include sex, age and body type variations
- Model the impact of foreign bodies on stability and performance
- Assess the impact of image post-processing on AI accuracy

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www.ibexmedical.co.uk
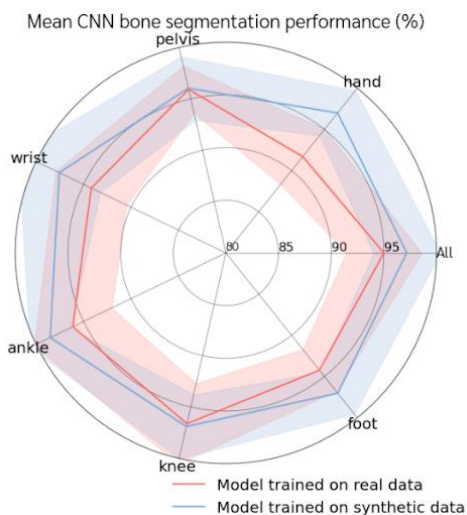
IBEX Trueview® X-ray simulator delivers

- Unlimited synthetic 2D X-ray data from a single 3D training volume

- Labelled images with known ground truth

- Accurate high-resolution X-ray images including scatter and Poisson noise, indistinguishable from real scans

- Instantly accessible large datasets with no ethics or regulatory barriers

- Images covering all possible imaging conditions
  - System design variations, including tube, filter and detector variations
  - Continuous range of kVp
  - Variations in imaging geometry including offset angle, SID and OID
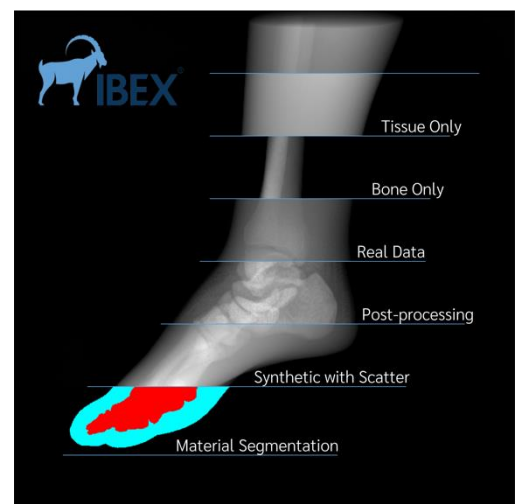 - Variations in bone and tissue density

IBEX Trueview® synthetic image

Performance

- Better than 2% pixel-for-pixel agreement to real data

- Proven to increase semantic segmentation accuracy in AI models

- AI trained with only synthetic data is as good or better than that trained with real data in semantic segmentation and regression problems.

AI trained on IBEX Trueview® synthetic data demonstrates improved segmentation performance on unseen real data

IBEX Trueview® synthetic data comes ready labelled with composition and segmentation

Learn more

Email us today at **enquiries@ibexinnovations.co.uk** to learn how the Trueview X-ray simulator can speed up your AI development.

Take a look at the personal blog of the IBEX AI Lead, Dr Tom Jubb, here:
https://thomasjubb.blog/solving-the-ai-data-problem-in-medical-imaging/