

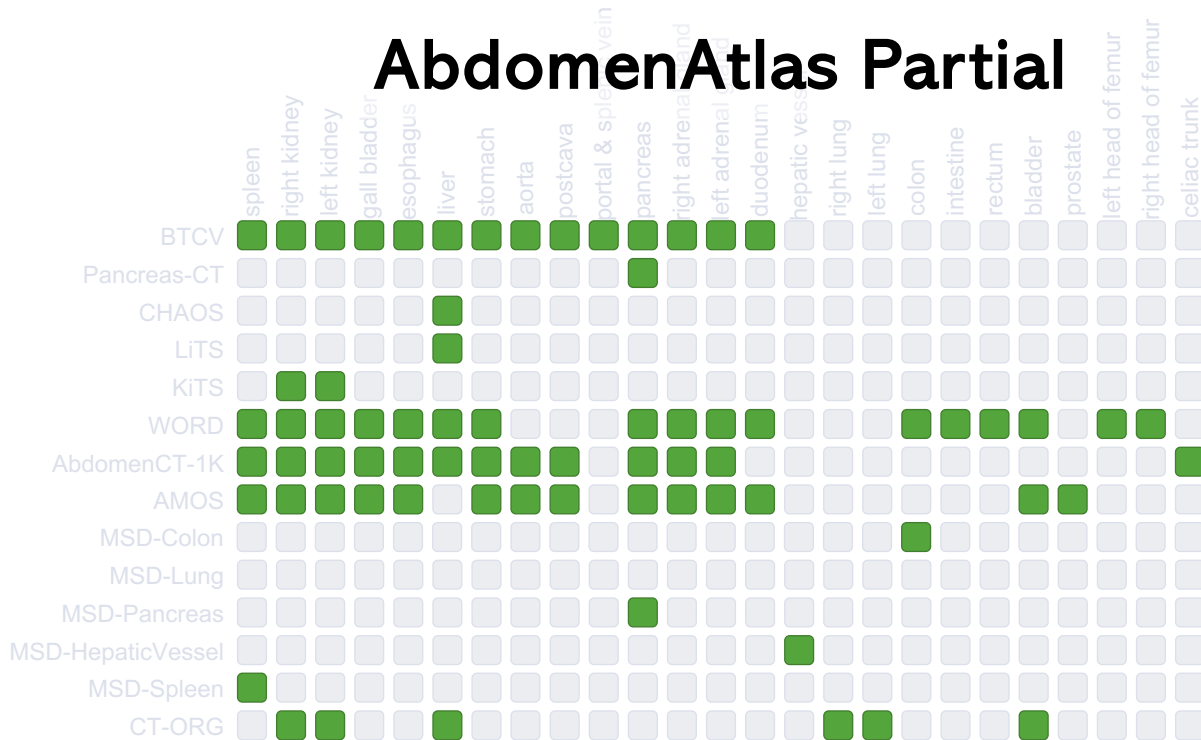
AbdomenAtlas-8K: Annotating 8,000 CT Volumes for Multi-Organ Segmentation in Three Weeks

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¹Johns Hopkins University ²Rutgers University ³City University of Hong Kong ⁴NVIDIA



AbdomenAtlas Partial



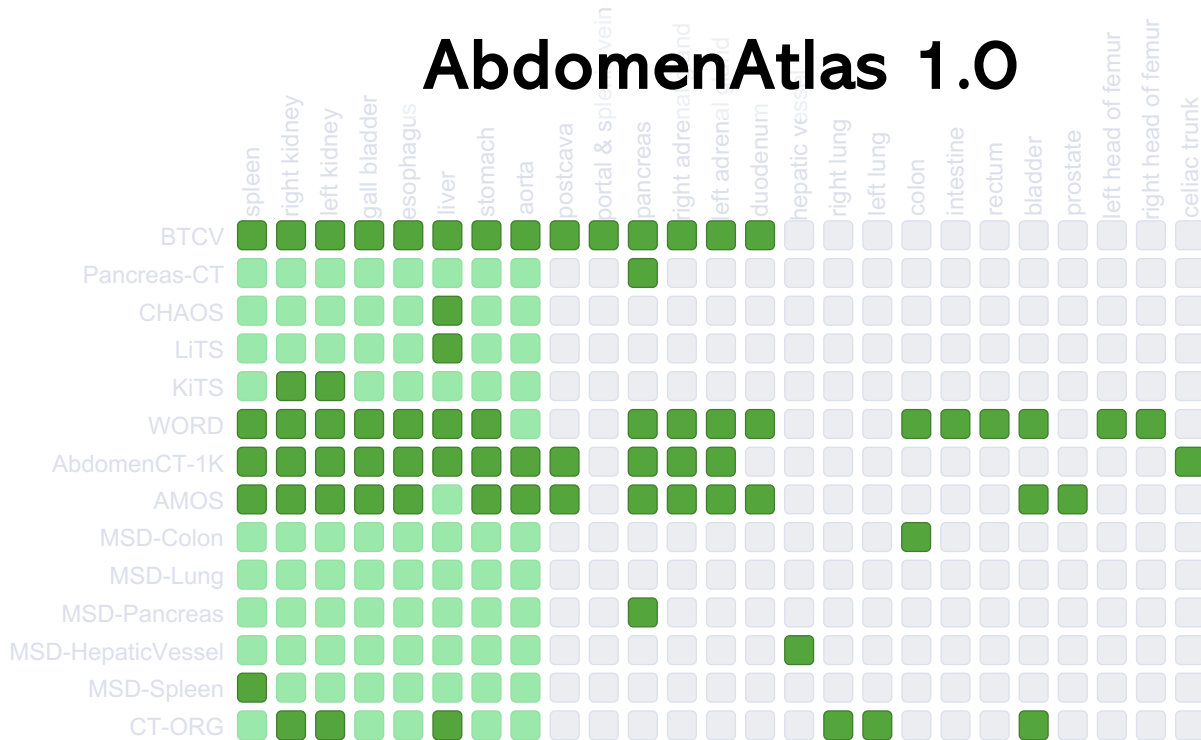
3,410 CT scans

14 datasets

27 hospitals



AbdomenAtlas 1.0



3,410 CT scans

14 datasets

27 hospitals

8 structures





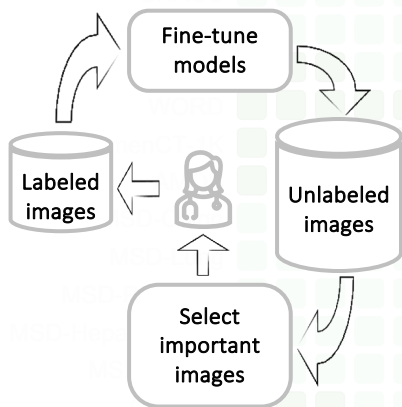
CT Scan

Inconsistency

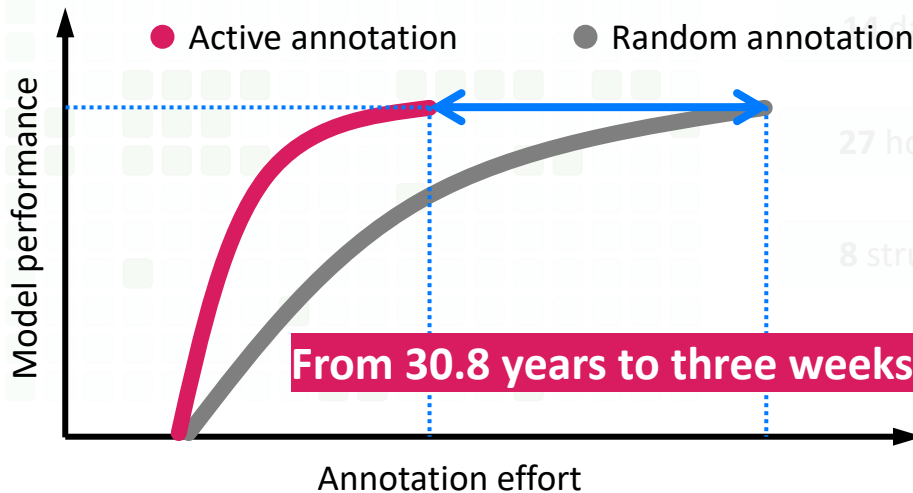
Uncertainty

Overlap

Attention Map



Interactive segmentation



9,120 CT scans

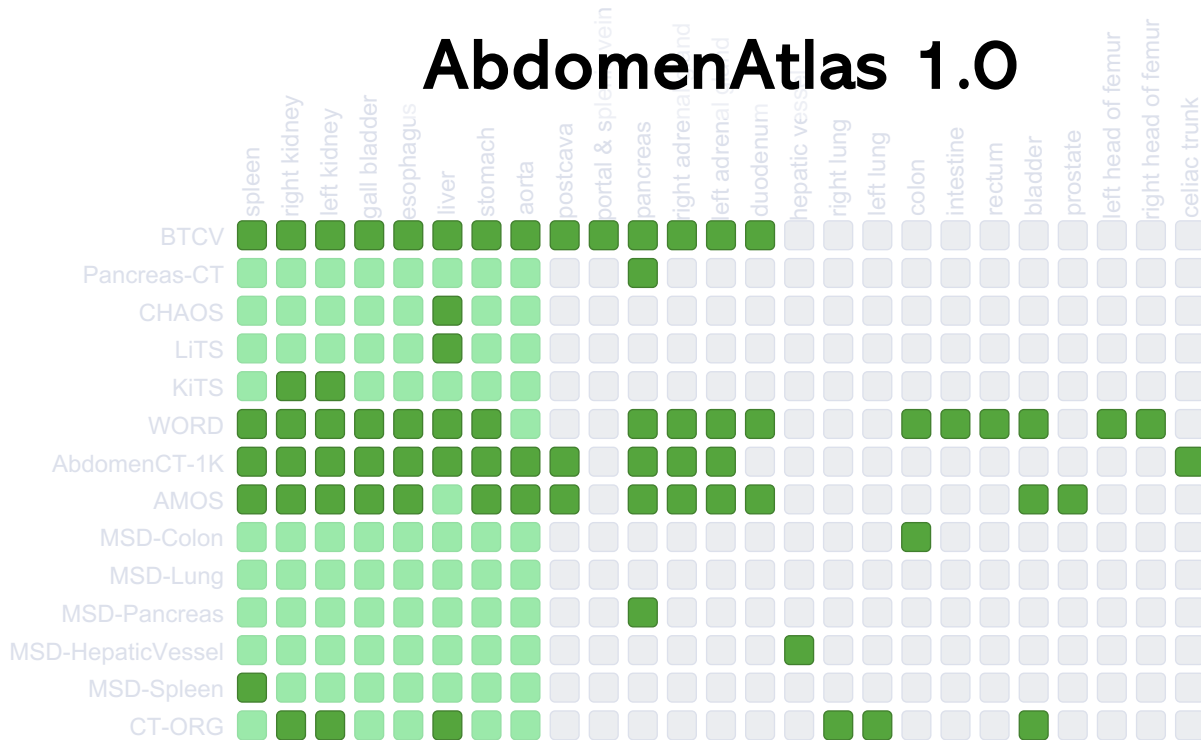
11 datasets

27 hospitals

8 structures

From 30.8 years to three weeks

AbdomenAtlas 1.0



3,410 CT scans

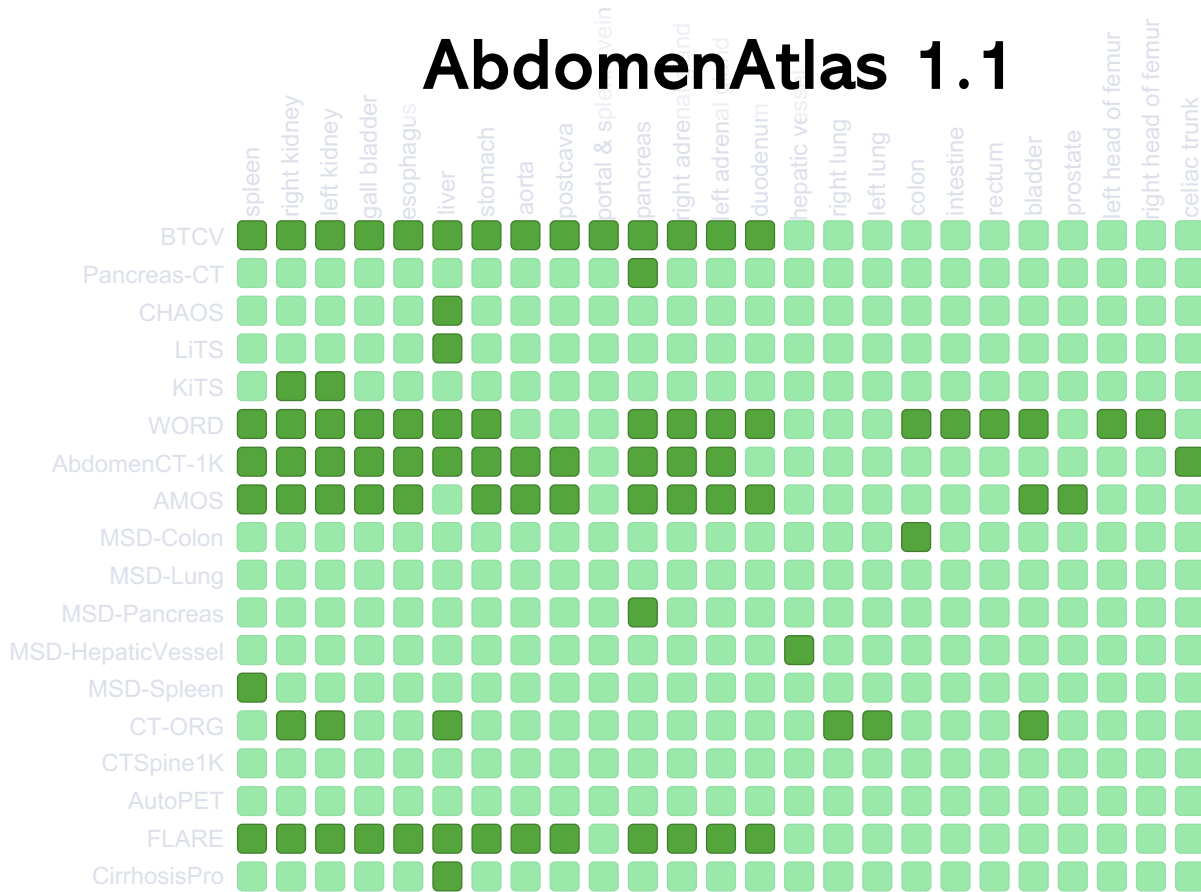
14 datasets

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AbdomenAtlas 1.1



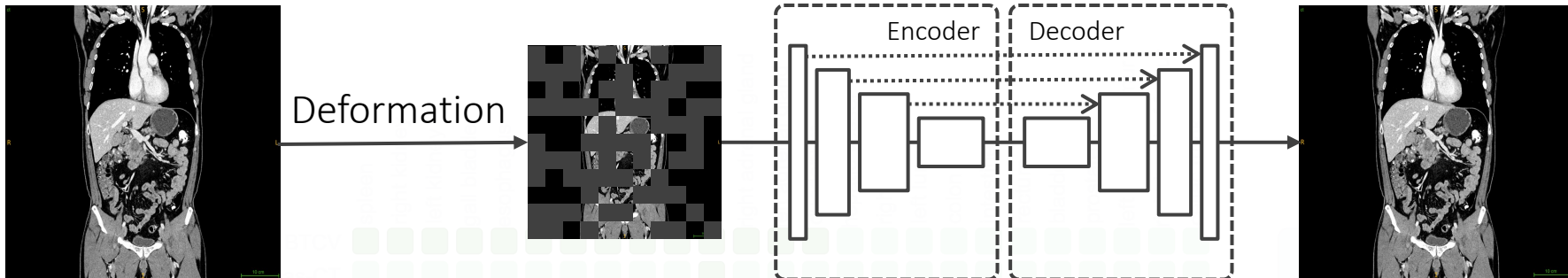
10,295 CT scans

18 datasets

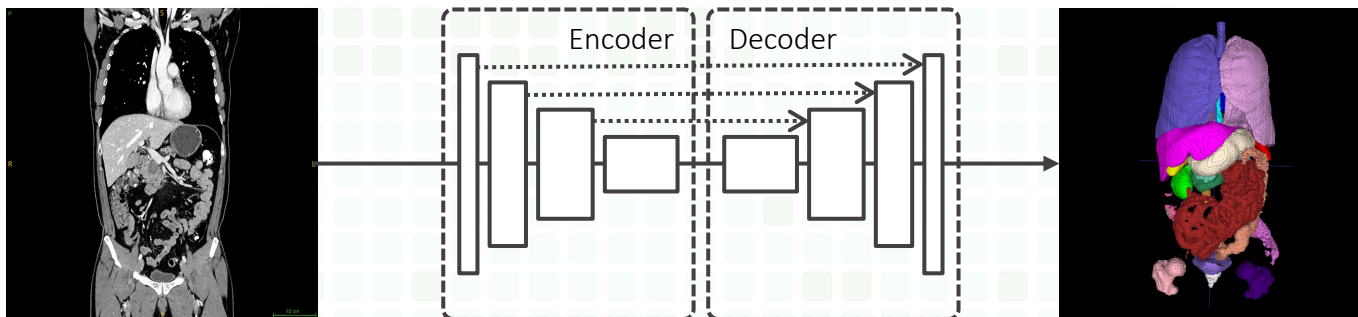
68 hospitals

25 structures





Self-supervised Pre-training



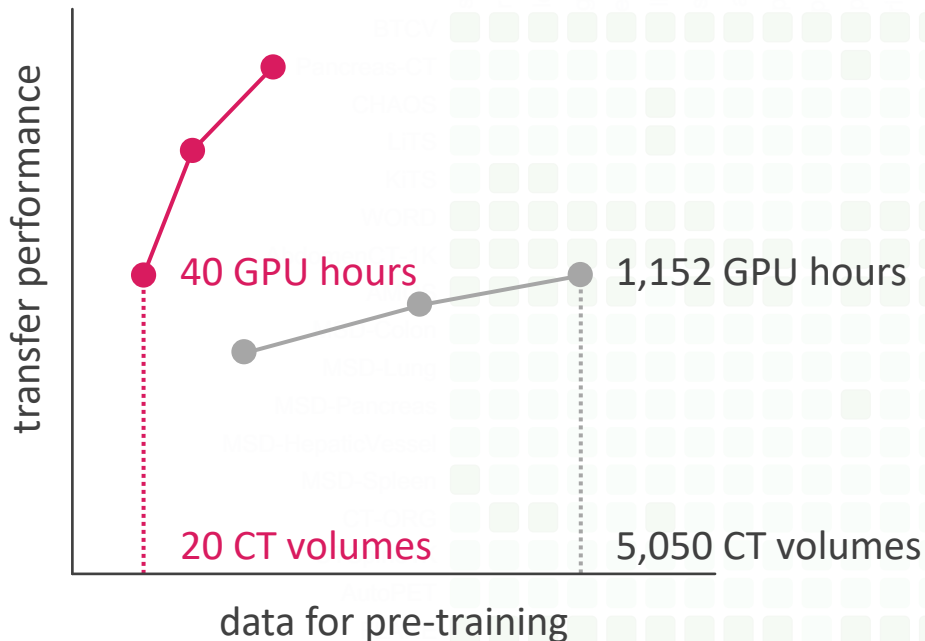
Supervised Pre-training

18 datasets

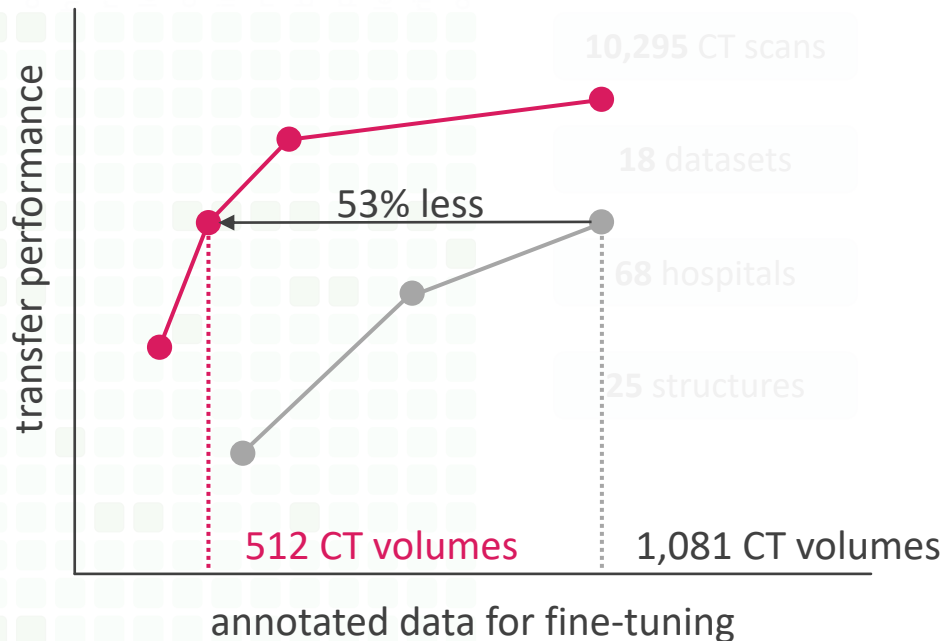
hospitals

structures

Supervised > Self-supervised data & computation efficiency



Supervised > Self-supervised annotation & learning efficiency





AbdomenAtlas 1.1

IMSeg - MICCAI & ISBI Challenge



IEEE INTERNATIONAL SYMPOSIUM
ON BIOMEDICAL IMAGING
ISBI 2024
27-30 MAY, 2024 - ATHENS, GREECE
MEGARON ATHENS INTERNATIONAL CONFERENCE CENTRE (MAICC)

Goal: Improving AI algorithms in performance and efficiency

Performance

- Out-of-distribution CT scans (scanners, protocols, demography, etc.)
- Hard-to-segment anatomical structures (small organs, tubular structure, etc.)

Efficiency

- Inference time per CT scan; Computational cost

Setting

Training AI algorithms on *AbdomenAtlas 1.1* (other data sources are also allowed);
evaluating the AI on our proprietary multi-organ *JHH-1K dataset*.

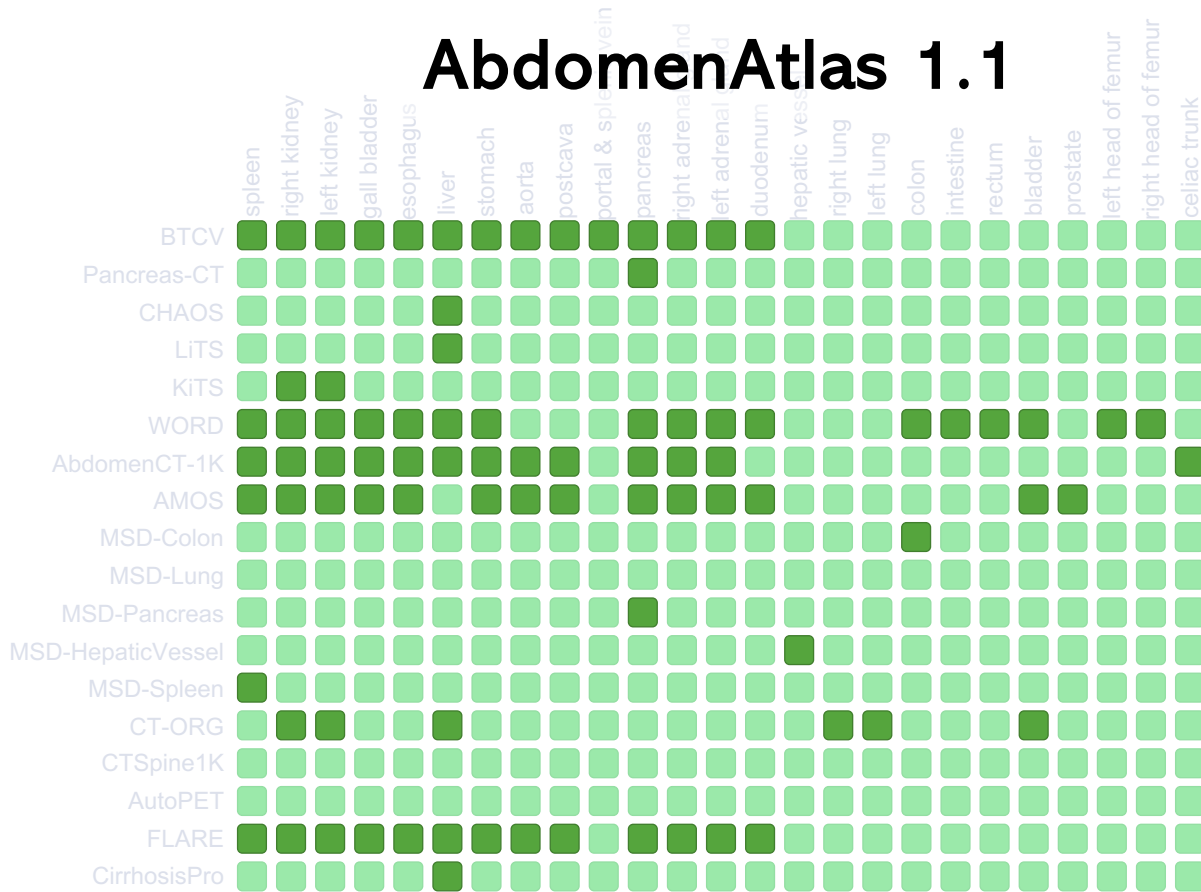
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10,295 CT scans

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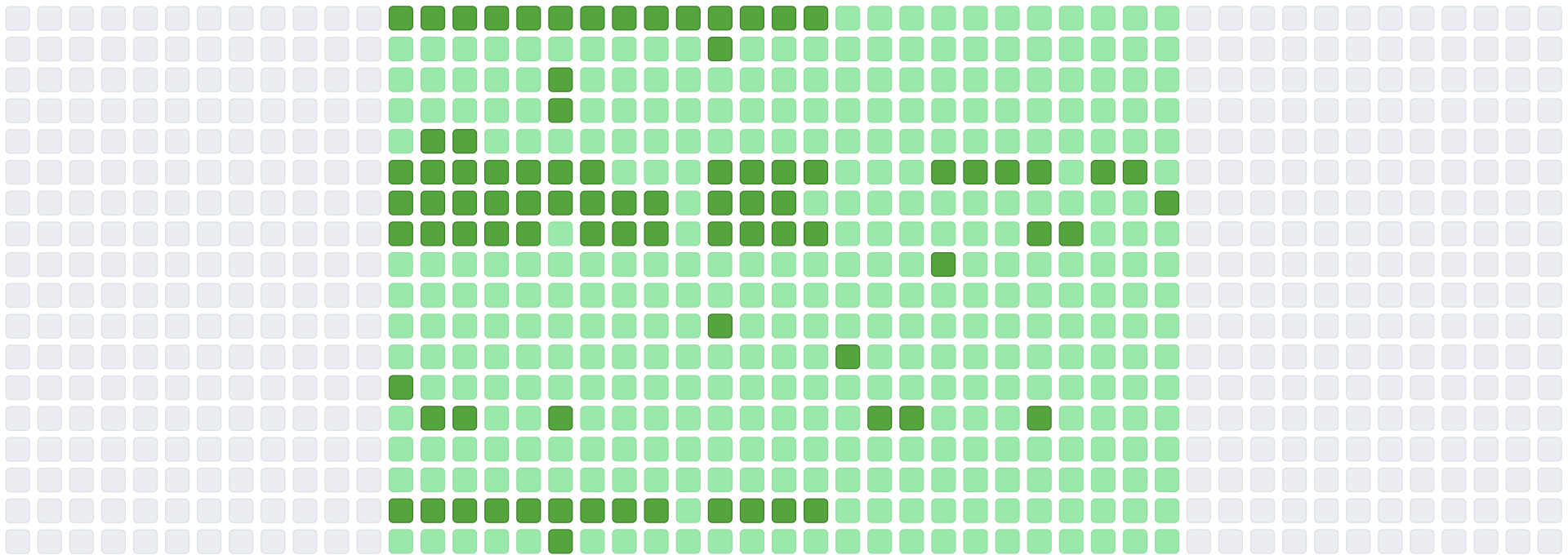
68 hospitals

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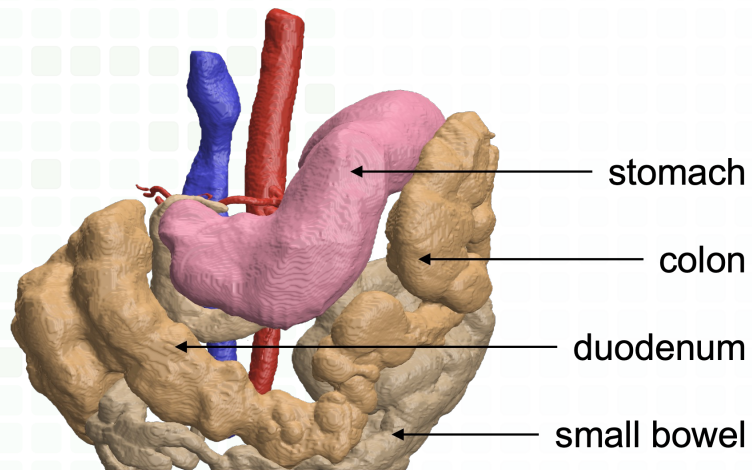
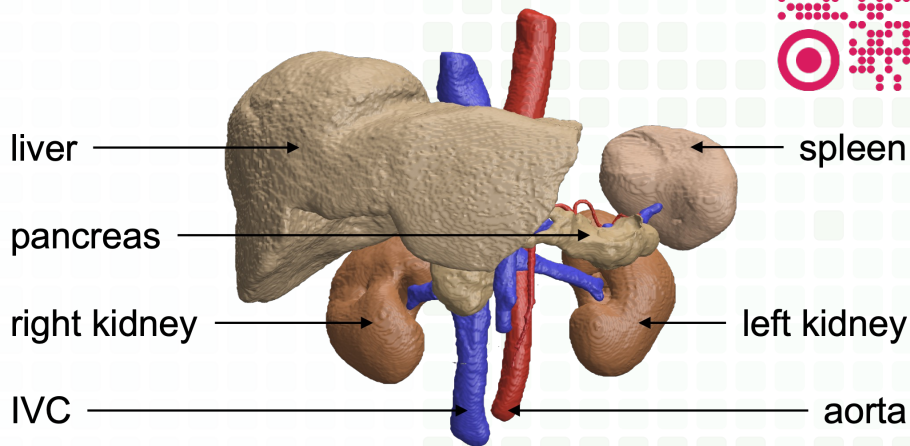
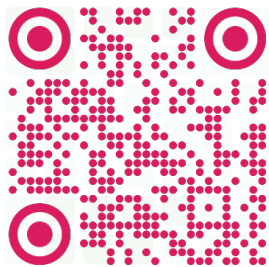
AbdomenAtlas

Ask to join group: <https://groups.google.com/u/2/g/imseg>



AbdomenAtlas

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THANK YOU

