

Pediatric Appendicitis vs. Machine Learning External Validation Dataset

Minimum requirements for an external ultrasound dataset:

- At least 50 pediatric patients (approx. half of those with appendicitis) admitted with abdominal pain and suspected appendicitis
- Multiple abdominal ultrasound images per patient, depicting relevant findings and image regions. E.g. images for one patient from our in-house dataset include appendix from different views, lymph nodes, etc. :



Images need to be made available as dicom or jpg/bmp/png files.

- Diagnosis label for each patient (*appendicitis* vs. *no appendicitis*): if the patient was treated surgically, the diagnosis is histologically confirmed; in the case of a conservative treatment, the patient is labelled as having appendicitis if they have Alvarado or pediatric appendicitis score 4 and an appendix diameter of 6 mm.

Ideal external ultrasound dataset (in addition to the requirements above):

- Labels for treatment assignment (*surgical* [including secondary] vs. *conservative* [w/o antibiotics]) and severity (*complicated appendicitis* [gangrenous or perforated] vs. *no complicated, simple appendicitis* [e.g. exsudative, phlegmonous])
- Demographic, laboratory, scoring, and ultrasound findings summarised in a table (as described in the supplementary of the original paper, doi: <https://doi.org/10.3389/fped.2021.662183>)
- Machine specs (in case different machines are used to collect the data).

MEDIA Paper: doi: 10.1016/j.media.2023.103042 (Interpretable and intervenable ultrasonography-based machine learning models for pediatric appendicitis).

Appendicitis Prediction Tool: <https://papt.inf.ethz.ch/>

In case of **interest or questions**, please reach out to
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