ML research to tackle the clinical wilderness

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News > Medscape Medical News > Oncology News

AI Beats Pathologists in Predicting Survival in Brain Cancer

Roxanne Nelson, RN, BSN

AI Cardiologist Aces Its First Medical Exam

A neural network outperforms human cardiologists in a task involving heart scans

AI system beats team of 15 doctors in competition

Michael Walter | *Artificial Intelligence*

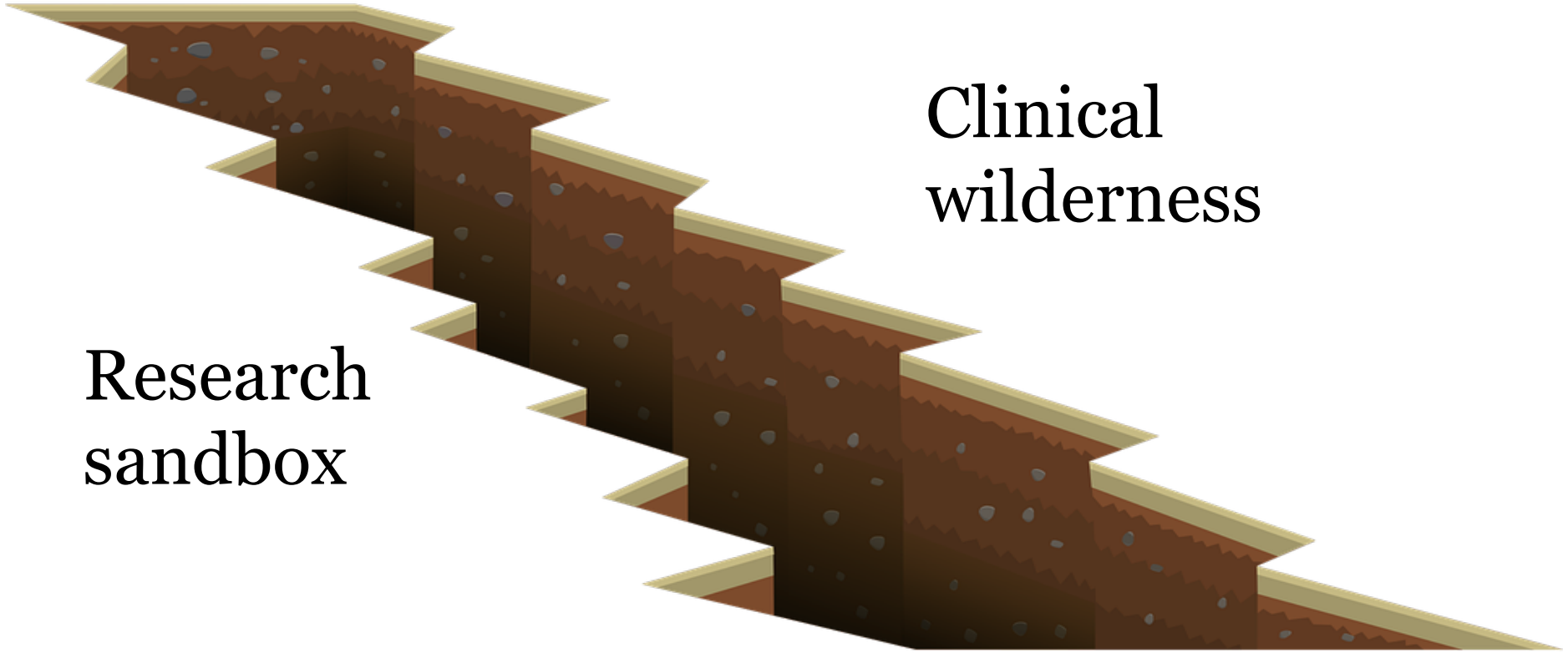
AI matched, outperformed radiologists in screening X-rays for certain diseases

by Hanae Armitage, Stanford University Medical Center

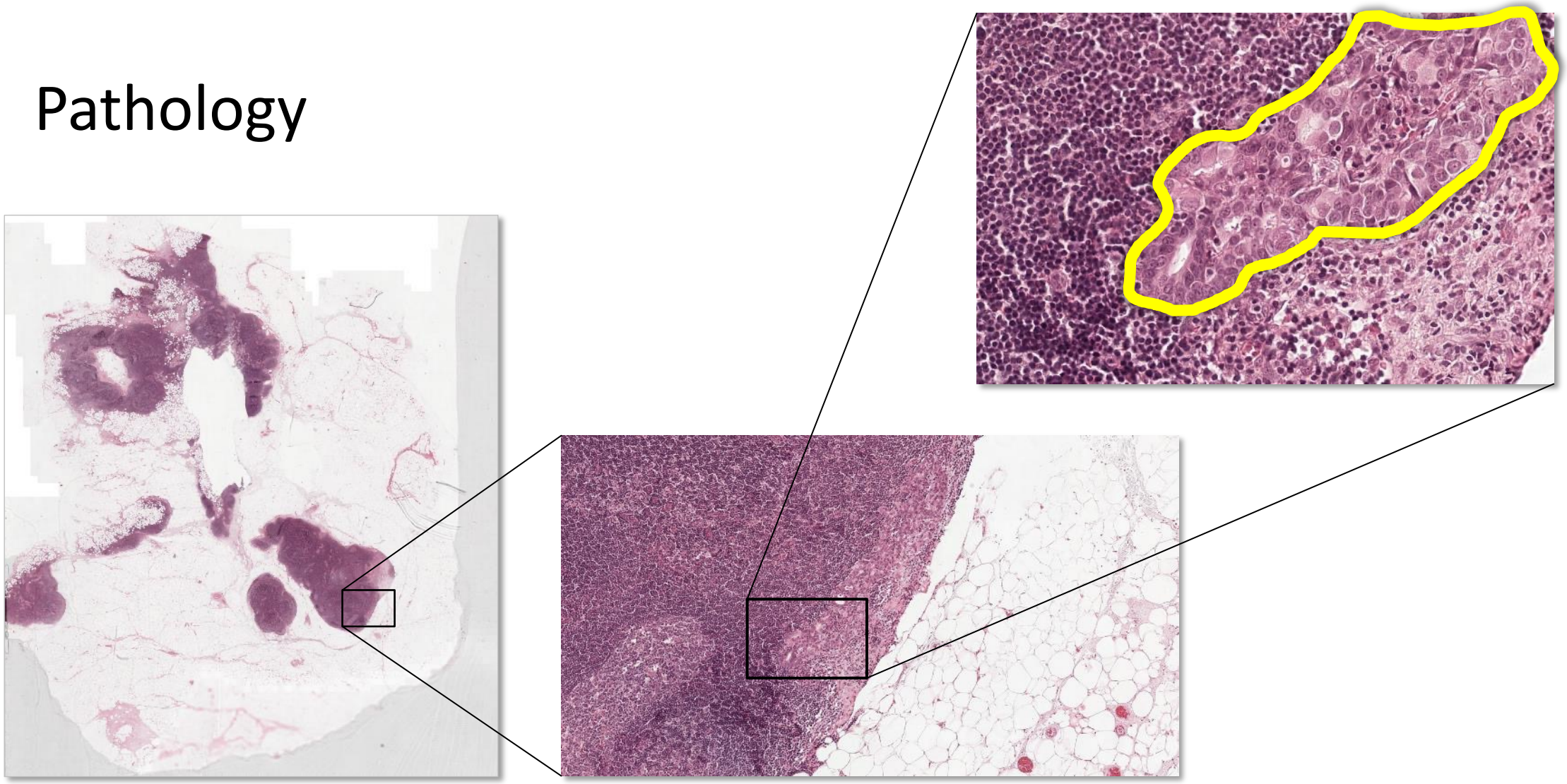
AI

Google's lung cancer detection AI outperforms 6 human radiologists

AI in imaging diagnostics



Pathology



Images from Camelyon challenge,
camelyon17.grand-challenge.org

Springer Link
Artificial Intelligence and Machine Learning for Digital Pathology
Artificial Intelligence and Machine Learning for Digital Pathology pp 56-88 |
Survey of XAI in Digital Pathology
Authors
Authors and affiliations
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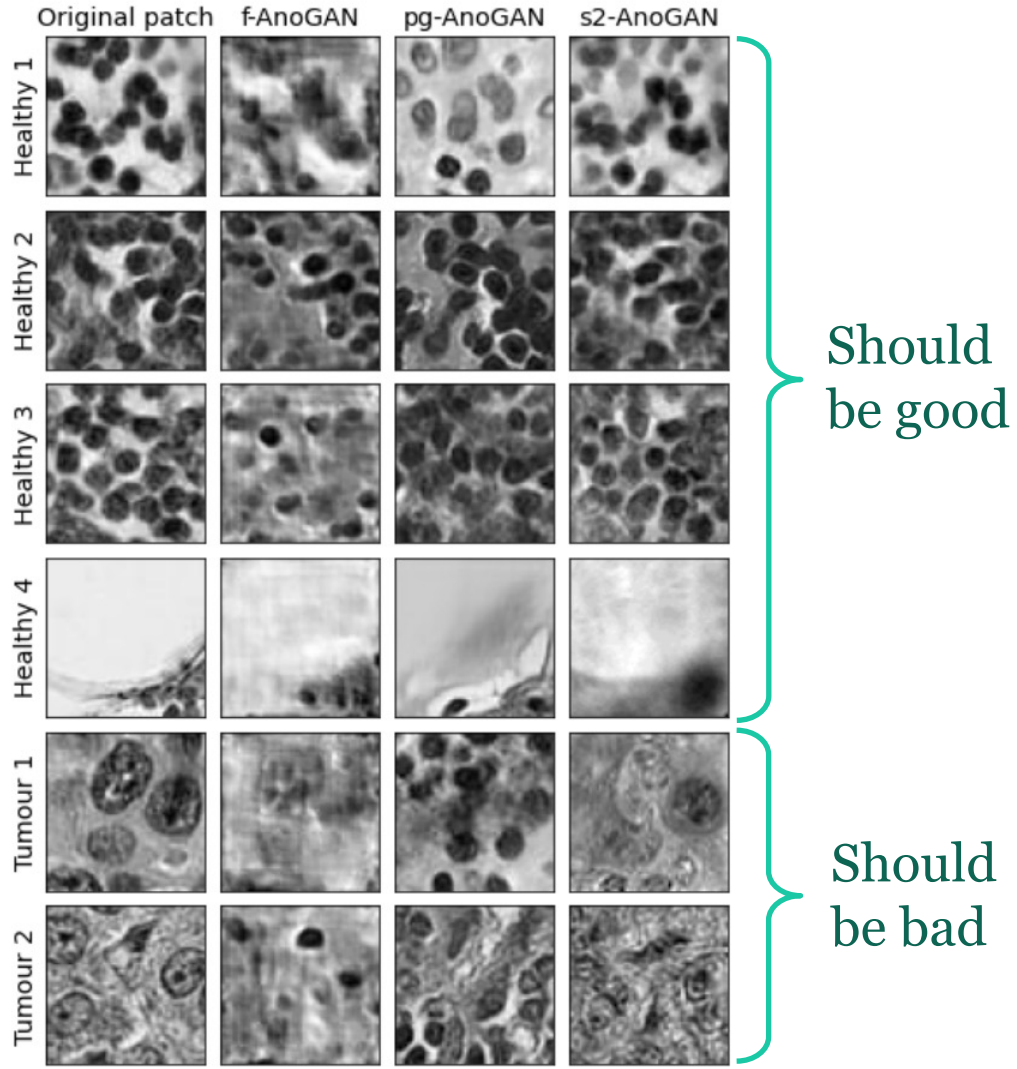
Chapter
First Online: 24 June 2020
5
Mentions
355
Downloads
Part of the Lecture Notes in Computer Science book series (LNCS, volume 1

Development
Quality assurance
Clinical usage
AI developer
QA specialist
Pathologist

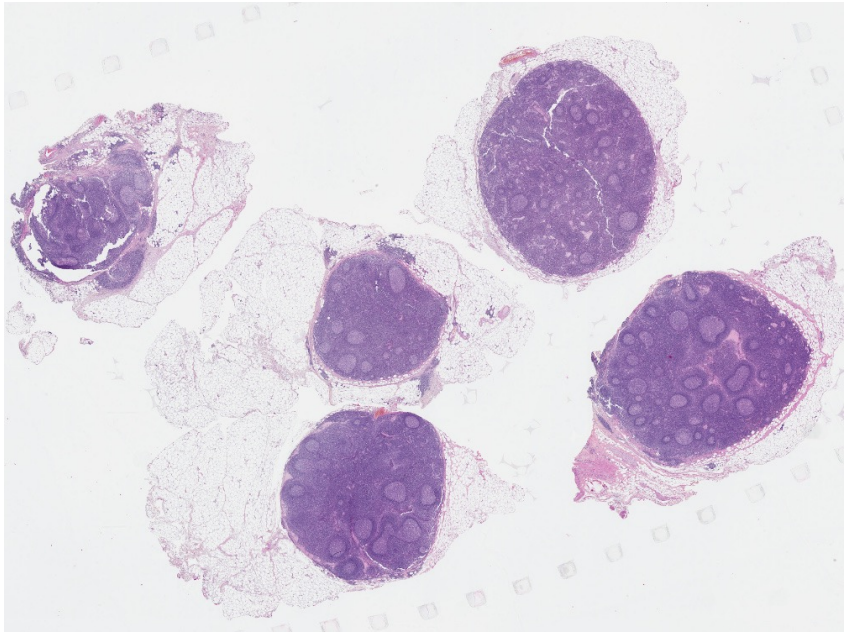
Anomaly detection using GANs

- Training
  - Train synthesizer for healthy data
- Anomaly detection
  - Let synthesizer reconstruct image
  - Non-healthy is “new”
    → poor reconstruction



Poceviciute et al.,
ISBI, 2021

Robustness of cancer detection in clinically realistic setting

- Typical situation:
  - Locked model
  - Need for improving local performance
  - Need for spotting mispredictions

- Exploring test time augmentation