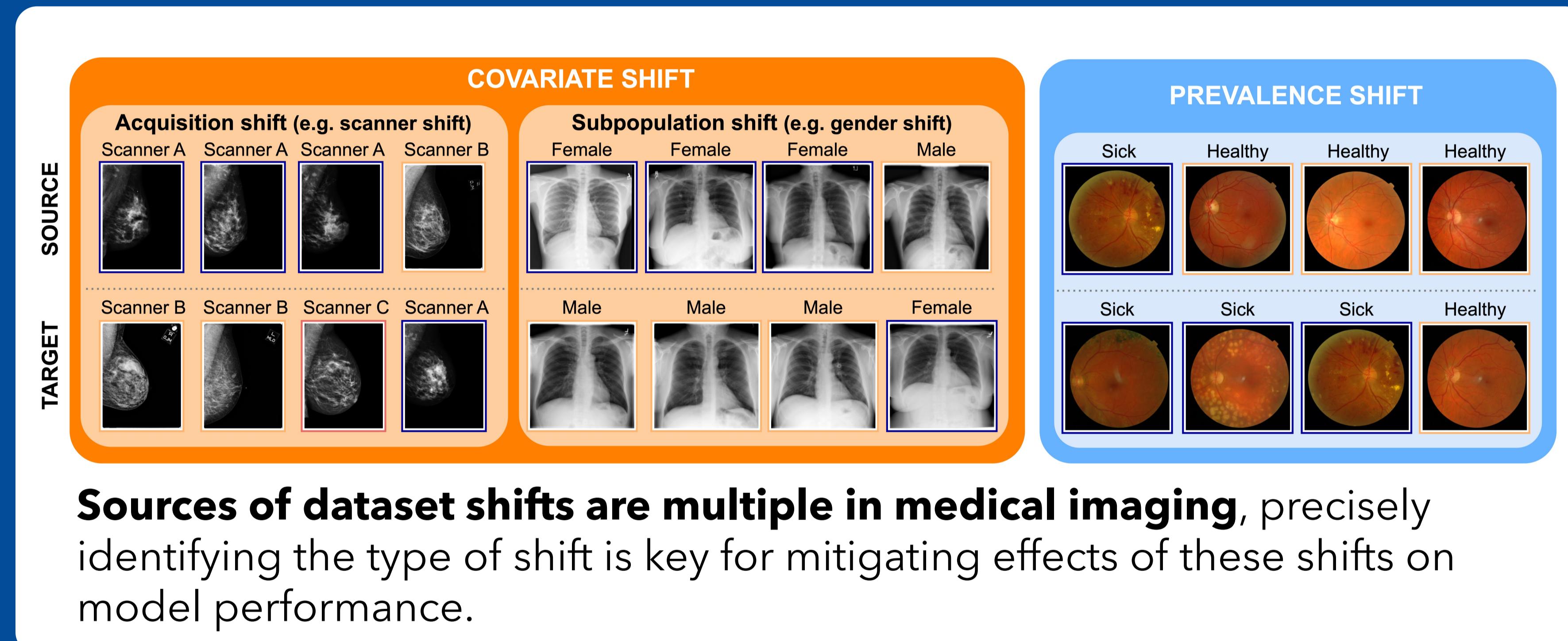


EFFECTIVE DATASET SHIFT IDENTIFICATION FOR ROOT CAUSE ANALYSIS OF AI PERFORMANCE DRIFT

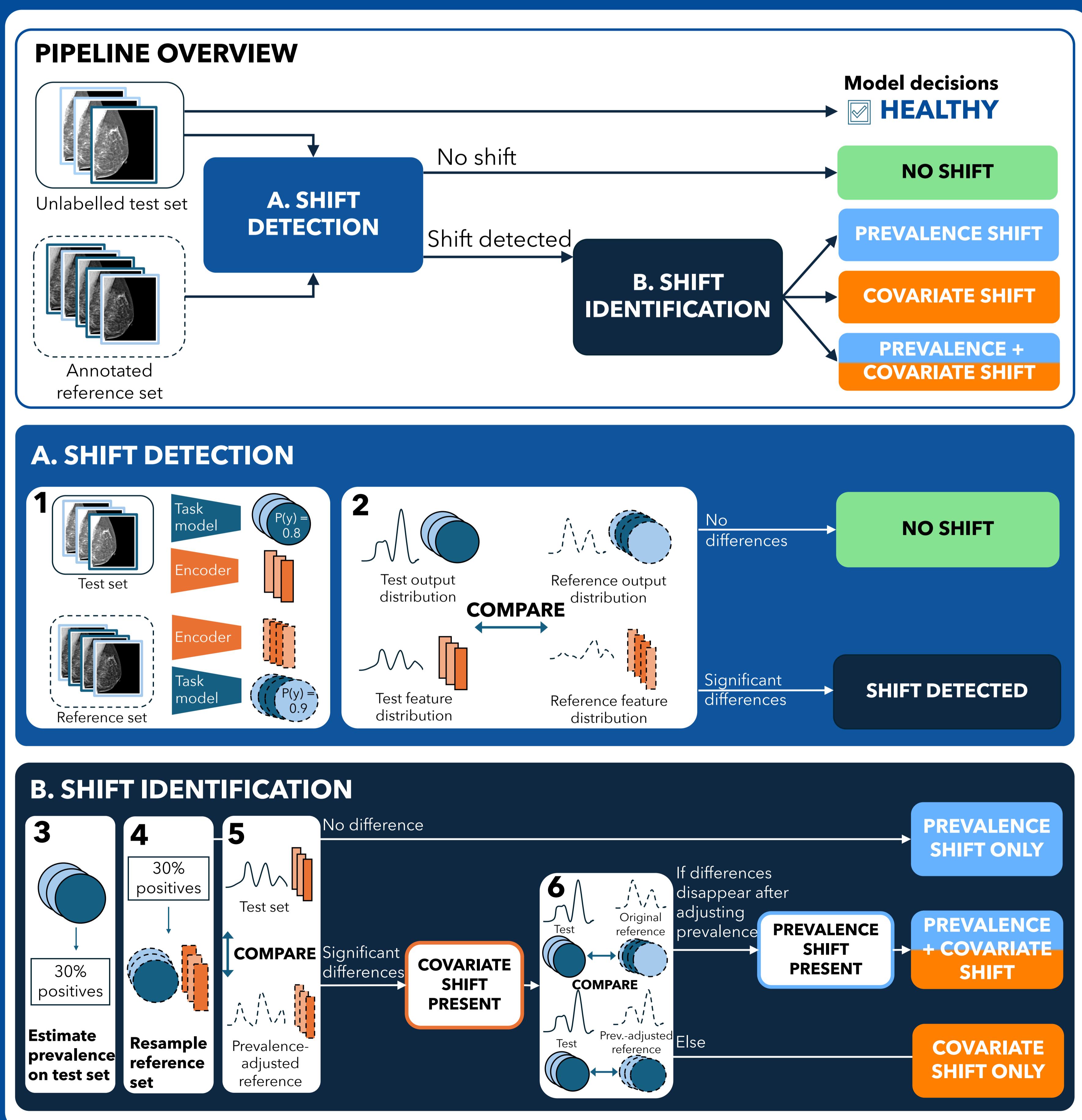
Mélanie Roschewitz, Raghav Mehta, Charles Jones, and Ben Glocker

- Dataset **shifts can severely affect AI performance** in clinical settings.
- Methods exists to detect the presence of dataset shift at test-time
- But detection is insufficient → accurately *identifying* the type of shift is crucial for effective mitigation.
- We propose an **unsupervised framework able to precisely identify the type of shift**, distinguishing between prevalence, covariate, or mixed
- Evaluated across three imaging modalities, our framework achieves high shift identification accuracy, across 5 types of real-world shifts.

MOTIVATION



METHOD

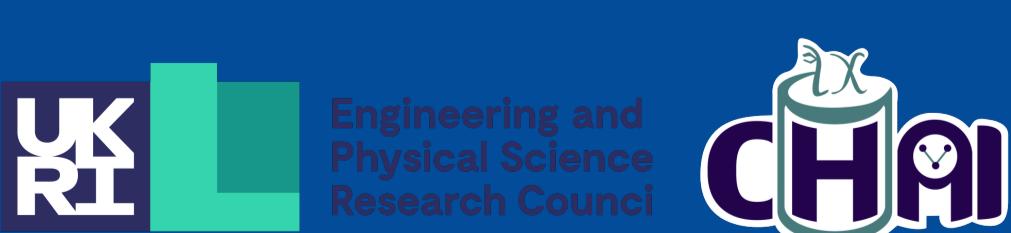


Link to pre-print



IMPERIAL

Imperial College London President's PhD scholarship



Causality in Healthcare AI Hub (EP/Y028856/1)



Kheiron/RAEng Research Chair in Safe Deployment of Medical Imaging AI



Horizon Europe research & innovation programme (101080302)



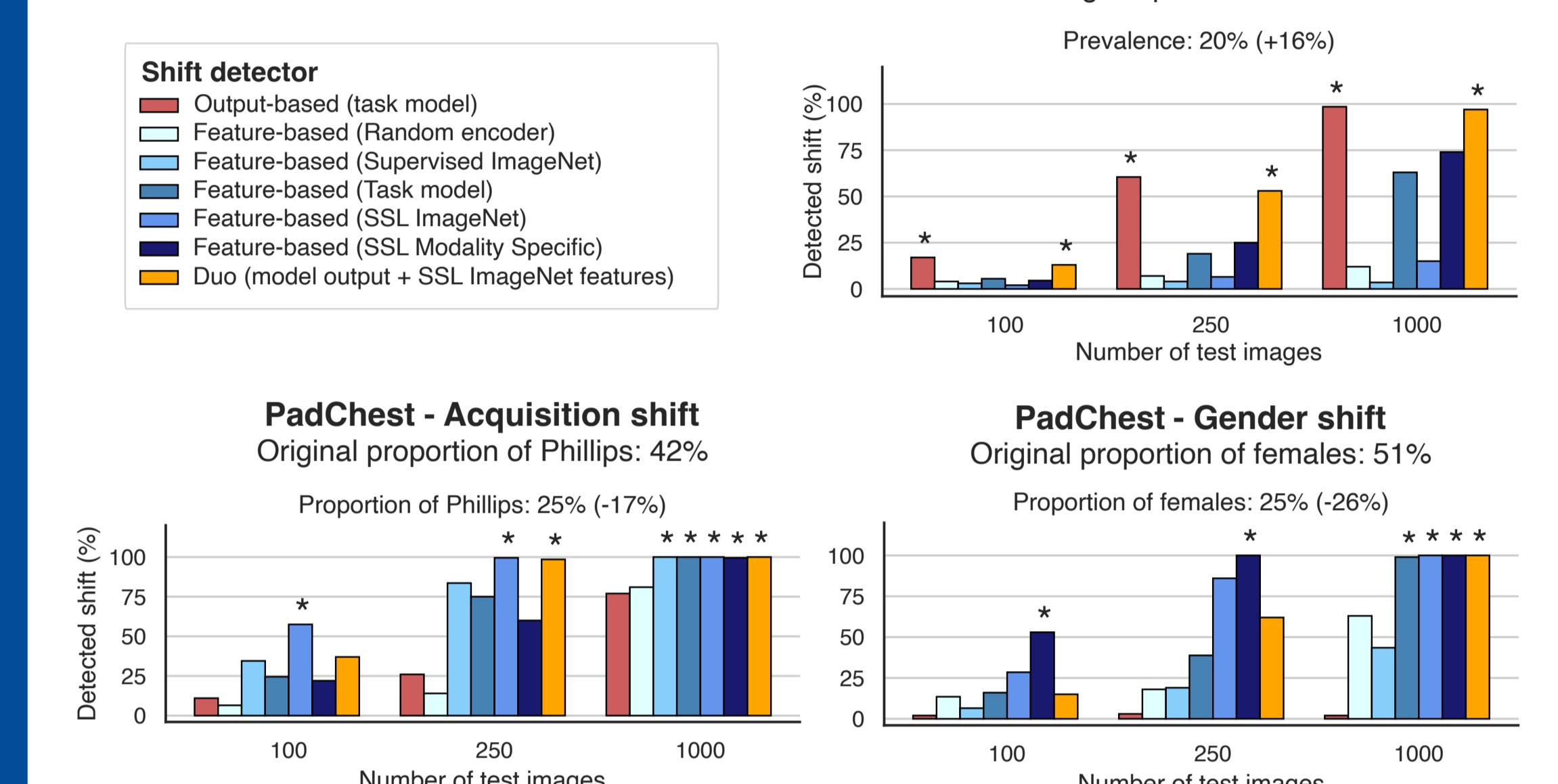
Microsoft & EPSRC PhD Scholarship



Google PhD Fellowship

RESULTS

→ Different types of shift require different types of shift detectors



→ Reliable identification of prevalence, covariate and mixed shifts

