**AI For Medical Diagnosis**

## Week 1 and Week 2

[Chest X Ray 8 Dataset](https://arxiv.org/abs/1705.02315)

[CheXNeXt](https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002686)

[Dermatology](https://www.nature.com/articles/nature21056)

[Ophthalmology](https://www.ncbi.nlm.nih.gov/pubmed/27898976)

[Pathology](https://jamanetwork.com/journals/jama/fullarticle/2665774)

## Week 3

[Data - decathlon 10 challenge](https://decathlon-10.grand-challenge.org/)

[Decathlon 10 paper](https://arxiv.org/pdf/1902.09063.pdf) (contains brief background on CT — see task\_01 (brain tumour))

[3D U-Net](https://arxiv.org/abs/1606.06650)

[U-Net](https://arxiv.org/abs/1505.04597)

**AI For Medical Prognosis**

Week 1

Dataset is synthetic, so none other than technical references.

[Chads-vasc risk score](https://journal.chestnet.org/article/S0012-3692(10)60067-0/fulltext)

[MELD score](https://aasldpubs.onlinelibrary.wiley.com/doi/full/10.1002/hep.21563)

[ASCVD+](https://www.ahajournals.org/doi/full/10.1161/01.cir.0000437738.63853.7a)

Week 2

Data: [NHANES I](https://wwwn.cdc.gov/nchs/nhanes/nhanes1/) links, [references](https://wwwn.cdc.gov/nchs/nhanes/nhefs/)

[Data in SHAP library](https://github.com/slundberg/shap)

Also used this [notebook](https://slundberg.github.io/shap/notebooks/NHANES%20I%20Survival%20Model.html) by the creator SHAP, Scott Lundberg, as a loose reference when developing the assignment.

Week 3

[Lifelines library](https://lifelines.readthedocs.io/en/latest/)

Lifelines is also the source of the dataset. It in turn sources its data from [StatsDirect](https://www.statsdirect.com/help/content/survival_analysis/logrank.htm" \t "_blank), which takes it from [Arbitrage and Berry](http://www.medicine.mcgill.ca/epidemiology/hanley/c634/lifetables/abm_17.PDF)

Week 4

[PBC Dataset Dataset](http://biostat.mc.vanderbilt.edu/wiki/pub/Main/DataSets/pbc.html)

[Cox Model](https://www.jstor.org/stable/2985181?seq=1)

[Random survival forest](https://arxiv.org/pdf/0811.1645.pdf)

[Harrell C-Index](https://www.ncbi.nlm.nih.gov/pubmed/7069920)

**AI For Medical Treatment**

## Week 1

* Levamisole and fluororacil background: <https://www.nejm.org/doi/full/10.1056/NEJM199002083220602>
* Data sourced from here: <https://www.rdocumentation.org/packages/survival/versions/3.1-8/topics/colon>
* C-statistic for benefit: <https://www.ncbi.nlm.nih.gov/pubmed/29132832>
* T-learner: <https://arxiv.org/pdf/1706.03461.pdf>

## Week 2

* Grad cam: <https://arxiv.org/pdf/1610.02391.pdf>
* Random forests + permutation importance: <https://www.stat.berkeley.edu/~breiman/randomforest2001.pdf> (**R45f14345c000-1**Breiman, “Random Forests”, Machine Learning, 45(1), 5-32, 2001.)
* Shapley importance: <https://www.nature.com/articles/s42256-019-0138-9>

## Week 3

* Labeling methods and dataset: <https://arxiv.org/abs/1901.07031>
* Huggingface transformers library: <https://github.com/huggingface/transformers>
* BERT paper: <https://arxiv.org/abs/1810.04805>
* Question answering data set (used for example): <https://rajpurkar.github.io/SQuAD-explorer/>

Clinical note example for question answering: <https://www.mtsamples.com/>