MACHINE LEARNING & DATA ANALYTICS

FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG
FACULTY OF ENGINEERING

Identify a trial population for clinical studies on diabetes drug testing with a Neural Network

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Machine Learning and Data Analytics for Industry 4.0
Mid-Term Presentation
Machine Learning and Data Analytics (MaD) Lab
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Pave the way

The new

electronic patient file

coming into force

on 1.1.2021

Jens Spahn
Minister of Health

Figure 1. Jens Spahn https://www.jens-spahn.de/hubfs/Jens_Spahn_08_breit.jpeg
Figure 2. EHR https://de.cleanpng.com/png-chs524/download-png.html

Electronic Health Records

Wanna make use of **data**

Preserve privacy?

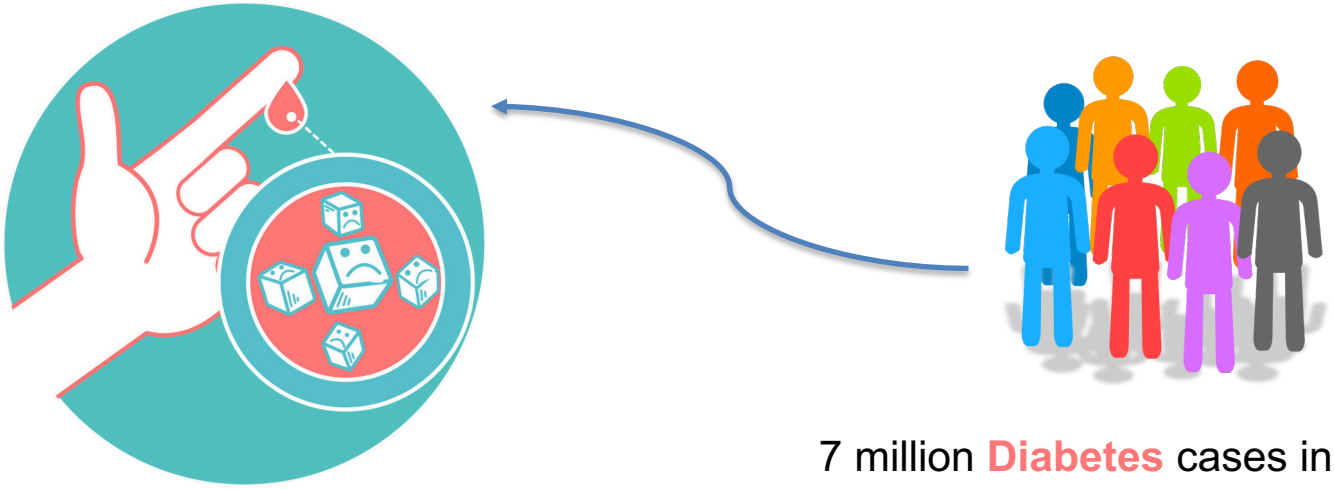
Many solutions

one goal

Figure 3. Germany eHealth https://www.krankenkassenzentrale.de/wiki/incoming-en#

Application on Diabetes

Find a target population for
clinical trial testing of a Diabetes drug

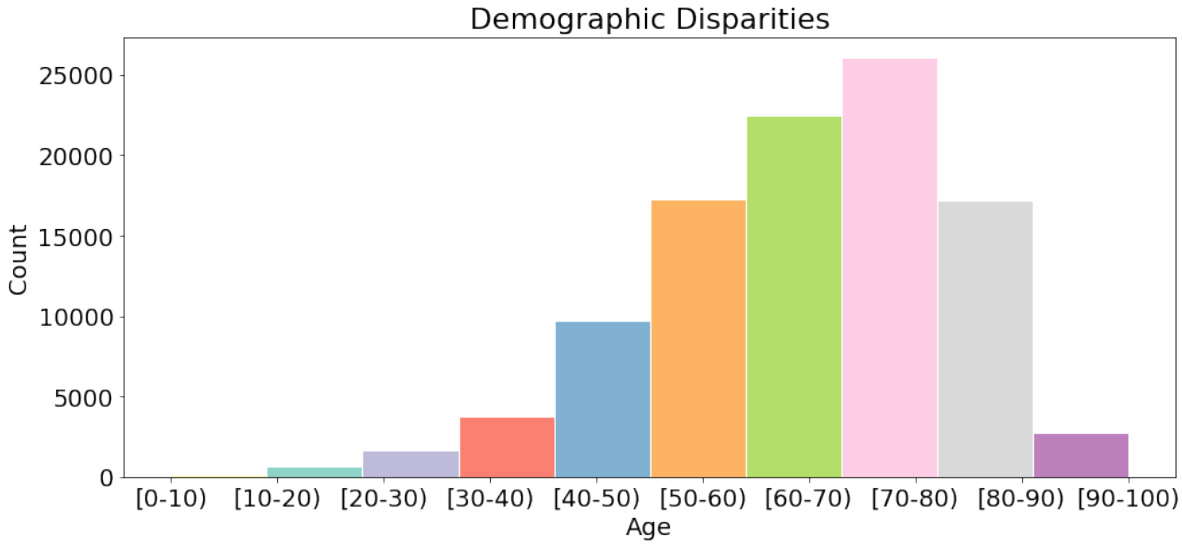


7 million **Diabetes** cases in Germany [1]

Figure 4. Diabetes https://www.vectorstock.com/royalty-free-vector/concept-of-diabetes-sugar-vector-18519211
[1] https://www.diabetesde.org/ueber_diabetes/was_ist_diabetes_/diabetes_in_zahlen

Disparities

- From the UCI Machine Learning Repository [2]
- Collected 1999-2008 in the USA



[2] https://archive.ics.uci.edu/ml/datasets/diabetes

Prognosis

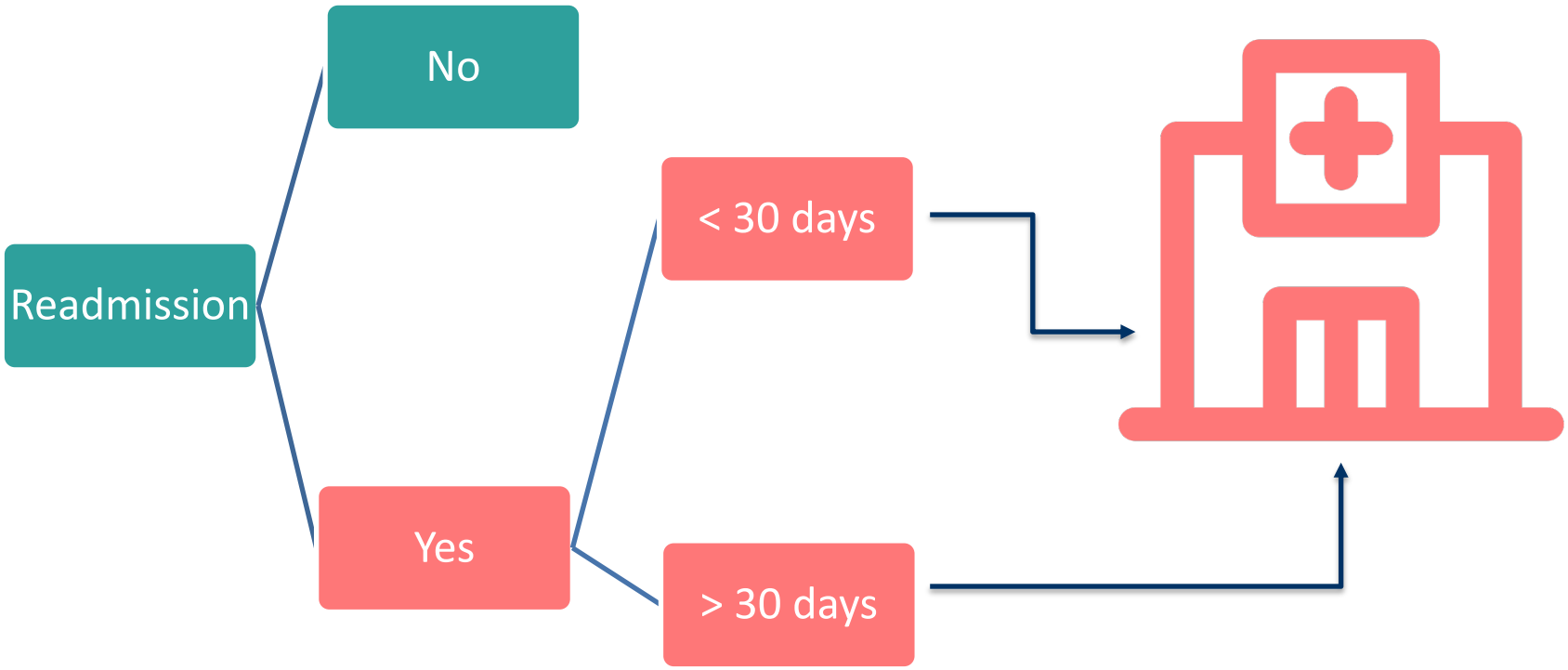
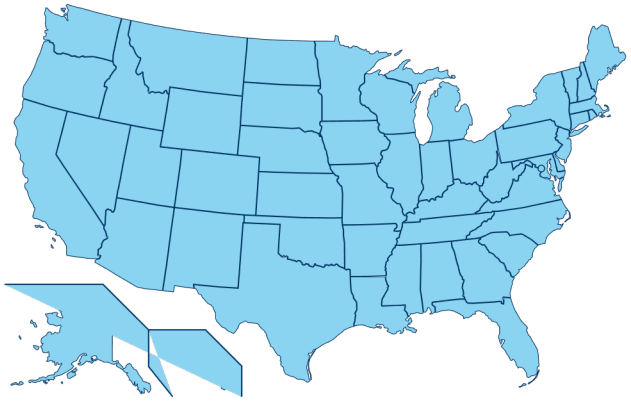


Figure 5. Hospital https://www.svgrepo.com/svg/116378/hospital

Regulations

FDA

Food and Drug Association



Arzneimittelbehörde

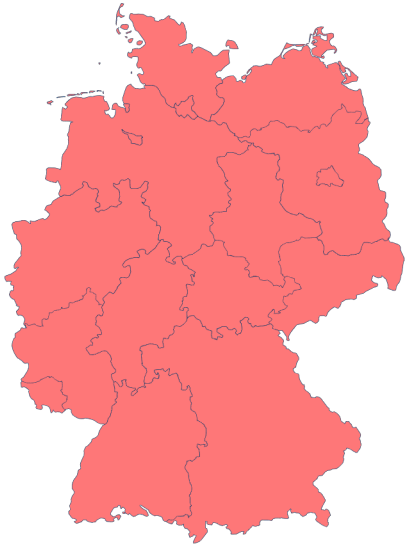
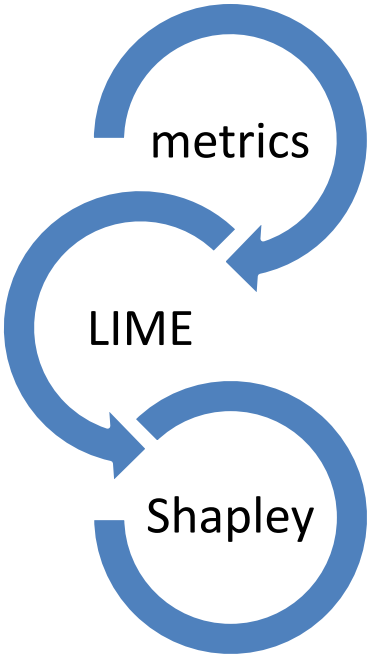


Figure 6. USA https://commons.wikimedia.org/wiki/File:Blank_US_Map_(states_only).svg
Figure 7. Germany https://commons.wikimedia.org/wiki/File:Karte_Bundesrepublik_Deutschland.svg

Explainable AI

(1)

(2)



Thanks for listening