

MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE TRAINING ON BIOMEDICAL DATASETS

EXPLORE THE MOST PREMIUM JOBS IN THE INDUSTRY

Add Machine Learning and AI project
experience on real datasets to your resume

Make your self job ready with hands on experience
in ML-AI Project in Retail, Finance and other
interesting fields

Peek into the future, with ML/AI:
Not only add skills but also experience in your
resume



**BEST JOBS OF DECADE
ARE COMING UP IN ML-AI**

PROJECT OVERVIEW

- The set of projects aim to provide an end-to-end experience in performing NLP on high-quality clinical datasets.
- The students will accomplish the following:
 - Cleaning the dataset and conducting feature engineering
 - Performing NLP on all the medical documents
 - Comparing accuracies across various ML models
- For the **problem statements basket** refer to the following slides



Can AI replace Doctors : NO

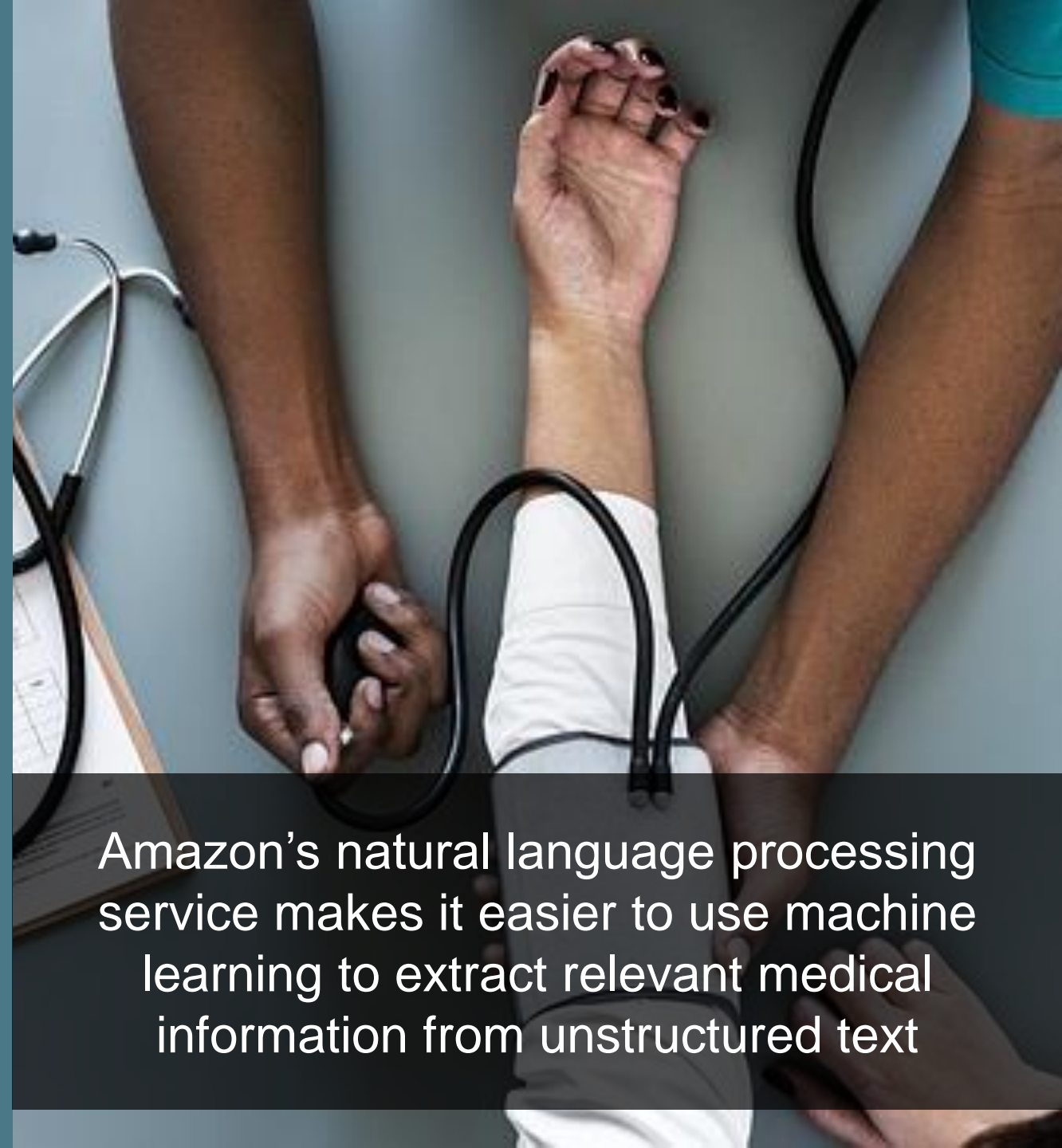
But the Doctors who know AI or usages of AI will certainly replace doctors who don't know AI.

PROBLEM STATEMENT

- The aim is to de-identify and extract personal health information from clinical narratives

OUTCOMES

- De-identifying personal health information from patient's discharge summaries
- Comparing results from ML algorithms with rule-based approaches



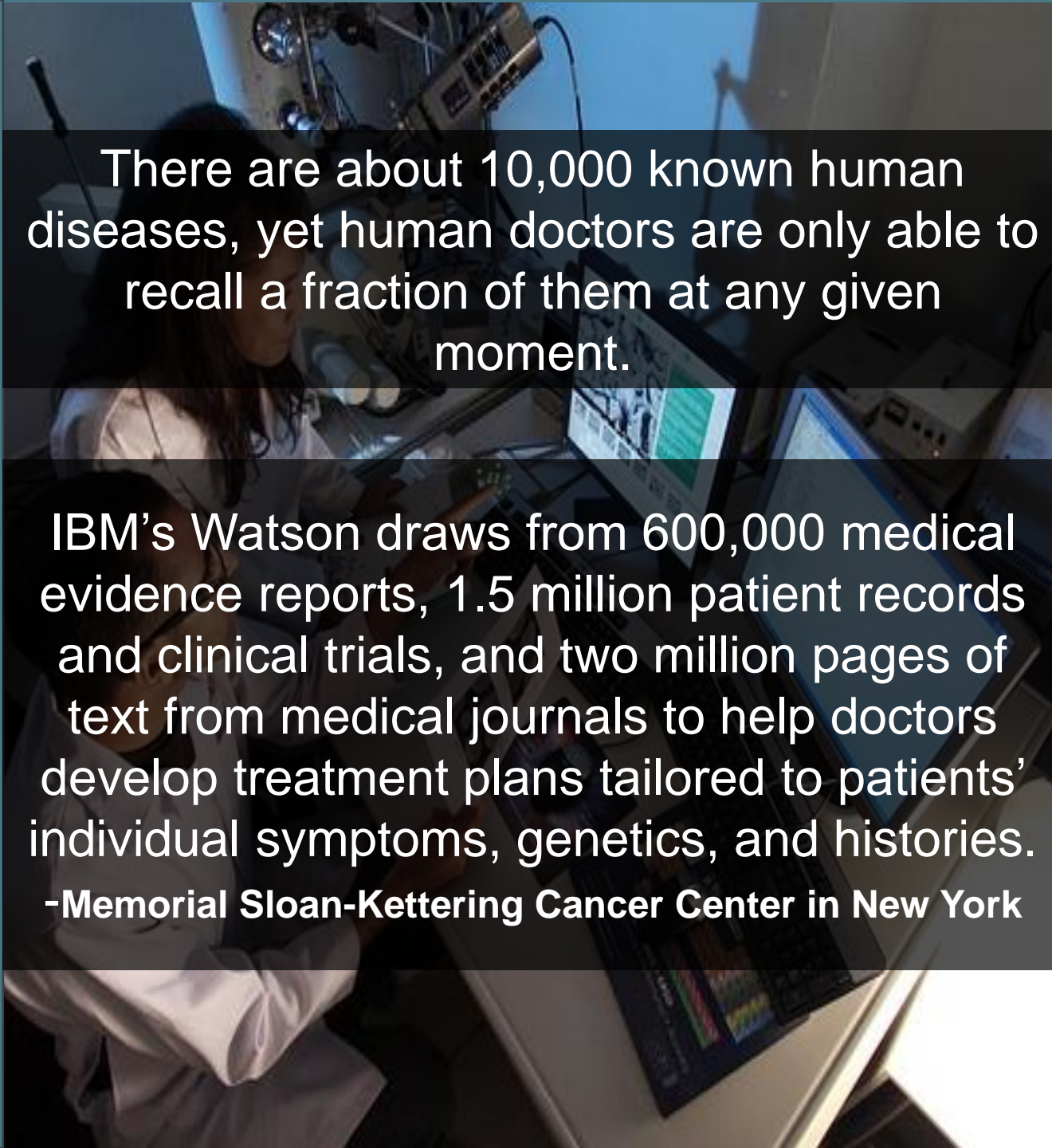
Amazon's natural language processing service makes it easier to use machine learning to extract relevant medical information from unstructured text

PROBLEM STATEMENT

- Risk factor identification from clinical records for diabetic patients

OUTCOMES

- Identify risk factors for heart disease in diabetic patients over time.
- Create a set of text annotations that track the progression of heart disease in diabetic patients.



There are about 10,000 known human diseases, yet human doctors are only able to recall a fraction of them at any given moment.

IBM's Watson draws from 600,000 medical evidence reports, 1.5 million patient records and clinical trials, and two million pages of text from medical journals to help doctors develop treatment plans tailored to patients' individual symptoms, genetics, and histories.

-Memorial Sloan-Kettering Cancer Center in New York

PROBLEM STATEMENT

- Extracting Structured Information from narrative clinical discharge summaries using ML

OUTCOMES

- Building dictionaries and creating features for concept extraction
- Clarifying assertions using SVM and rule based classifiers

Artificial Intelligence Is Transforming Genomics and Gene Editing




personalized medicine specific to a patient or population of genetically similar individuals, is expected to reach \$87 billion by 2023

PROBLEM STATEMENT

- Recognising obesity and comorbidities from sparse data

OUTCOMES

- Deidentifying symptoms of obesity and comorbidities from discharge summaries
- Classifying a particular discharge summary into *present, absent, questionable, unmentioned.*



**MACHINE LEARNING IN
HEALTHCARE IS A REALITY.
GOOGLE, IBM,
AMAZON, MICROSOFT ALL
JUMPING INTO THE RACE**

PROJECT PLAN

DURATION: 3 MONTHS (FULL-TIME)

Week 1-2: The idea is to introduce the student to the project and give a refresher on the concepts he knows and those which will be required for the course of the project.

Week 3-4: The student will be introduced to the dataset and he/she will be expected to engage in pre-processing and conduct NLP on the dataset

Week 5-7: The student will engage in feature extraction and conduct different NLP tools on the dataset

Week 8-11: The student is expected to build various ML and DL models which can extract Protected Health Information from clinical narratives using annotated corpus created using NLP

Week 12: The student should submit a report on the project completed and make a short presentation on the same



**WORK WITH ASSIGNED PROJECT
MANAGER AS IF YOU ARE
WORKING IN A JOB**

PROJECT SUBMISSION

- Solution Source Code
- Featurized Dataset
- Project Report
- Project Presentation: Building bridge between business and technology

PRE-REQUISITES

- The student is expected to have basic knowledge of:
 - Python Programming
 - Numpy, Pandas
 - sci-kit learn
 - Natural Language Processing
 - Preferable for professionals in medical diagnostics
- **Or attend our Fundamentals of ML / AI & Python Programming for Data Science (2 months) course**



**TRANSFORM YOUR CARRIER IN A
WELL QUALIFIED ML-AI
PROFESSIONAL**



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Institute of Artificial Intelligence

BUILD A STRONG ML-AI PROFILE VISIBLE TO INDUSTRY

- ✓ Emerging trends in ML AI
- ✓ Entrepreneurship in AI / ML / Healthcare
- ✓ **Building a professional profile**
- ✓ Solving the Work Experience problem
- ✓ How to write high quality ML blogs and publish to get visibility in Industry
- ✓ Research & Higher Education Options



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CLASS DETAILS

Mode: Instructor-led On-Line/Off-Line

Duration: 3 Months

Classes: 2 hours a day for 2 days in a week

Doubt Sessions: Schedule 1:1 sessions with instructor