ESSIR
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DoSSIER
Domain Specific Systems for Information Extraction and Retrieval
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Group work on Medical IR

Georgios Peikos, Wojciech Kusa, Annisa Maulida Ningtyas

UNIVERSITÀ DEGLI STUDI DI MILANO BICOCCA
DIPARTIMENTO DI INFORMATICA, SISTEMISTICA E COMUNICAZIONE
TU WIEN

Agenda

Introduction to clinical trials retrieval

Users

Task formulation

Queries

Documents

Notion of Relevance – retrieval goal

Your task and materials

Text Retrieval Conference (TREC)

Information: https://trec.nist.gov/overview.html

Clinical trials & Clinical trials retrieval

Clinical trials

Experiments conducted in the development of new medical treatments, drugs or devices

Task Description

A user must allocate patients to clinical trials (find eligible participants)

Users

Laypeople (e.g., patients)

Employees in health organizations

Researchers

Medical Experts, e.g., physicians

Formulation of the retrieval task

Retrieval Formulation

Given a **synthetic patient's case** as a query, retrieve eligible clinical trials from a collection of clinical trials

Synthetic patient's case

past medical history / current medical conditions / family description / unrelated

The patient is a 55-year-old man who was recently diagnosed with Parkinson's disease. He is complaining of slowness of movement and tremors. His disease is ranked as mild, Hoehn-Yahr Stage I. His past medical history is significant for hypertension and hypercholesterolemia. He lives with his wife. They have three children. He used to be active with gardening before his diagnosis. He complains of shaking and slow movement. He had difficulty entering through a door, as he was frozen and needed guidance to step in. His handwriting is getting smaller. He is offered Levodopa and Trihexyphenidyl. He is an alert and cooperative man who does not have any signs of dementia. He does not smoke or use any illicit drugs.

A clinical trial document

Structured Documents

Title, Description, Condition, Eligibility Criteria (important for this task)

Eligibility Criteria

Mention a trial's inclusion and exclusion criteria, along with its demographic information (gender, age)

Criteria

Inclusion Criteria:

- Male or female adults ages 18-40 or of 65 and or older at the time of enrollment
- Eligible to receive Fluad® (MF59Flu) or Fluzone® (HDFlu) if age 65 or older
- No history of anaphylactic reaction to gelatin, neomycin, or other vaccine component
- Not pregnant
- No immunosuppression or immunodeficiency
- No acute illness at time of vaccination
- Determined by medical history and clinical judgment to be eligible for the study, by being generally healthy, with no autoimmune or immunosuppressive conditions and having stable current medical conditions (subjects with preexisting stable disease, defined as disease not requiring significant change in therapy or hospitalization for worsening disease 12 weeks before receipt of study vaccine, will be eligible. A change in dose or therapy within a category (e.g., change from one nonsteroidal anti-inflammatory drug to another) is allowed. A change to a new therapy category (e.g., surgery or addition of a new pharmacological class) is only allowed if it is not caused by worsening disease. A change to a new therapy category caused by worsening disease is considered significant and therefore ineligible for enrollment.
- Patients with diabetes mellitus are eligible for inclusion if they have had a hemoglobin A1c measurement of <8.0 within the past 6 months prior to enrollment. These hemoglobin A1c measurements are recommended at least twice yearly by the American Diabetes Association (ADA), and the target levels here are representative of the goals of the ADA. These hemoglobin A1c levels will ensure that these participants have good glycemic control. (American Diabetes Association. American Diabetes Association Position Statement: Standards of Medical Care in Diabetes- 2015. Diabetes Care 2015;38(Suppl. 1): S1-S94)
- Able to follow study procedures in the opinion of the investigator
- Expected to be available for the duration of the study
- Weighs >110 lbs

Exclusion Criteria:

- Known or suspected immunodeficiency or receiving treatment with immunosuppressive therapy including cytotoxic agents or systemic corticosteroids (e.g., for cancer, HIV, or autoimmune disease). If systemic corticosteroids have been administered short term for treatment of an acute illness, subjects will be included if corticosteroid therapy (inhaled, intranasal, and intra-articular corticosteroid therapy is permitted) has been discontinued for at least 30 days.
- Serious chronic medical conditions including metastatic malignancy, severe chronic obstructive pulmonary disease requiring supplemental oxygen, end-stage renal disease with or without dialysis, clinically unstable cardiac disease, or any other disorder that, in the investigator's opinion, precludes the subject from participating in the study. Diabetic patients will be excluded if they do not have a hemoglobin A1c measurement within the past 6 months or if they had a hemoglobin A1c measurement of an A1c >8.0

What makes a clinical trial relevant for a given patient (query)?

Highly Relevant Trials (eligible trial)

Those for which the patient covers as many inclusion criteria as possible (i.e., all) and, at the same time, none of the exclusion criteria

Relevant Trials (excluded trials)

The patient is excluded from the clinical trial, but the condition of the query matches the patient's condition

Not Relevant

All the rest

Working on this task

You will be given:

A collection of clinical trials in a .csv format for you to index

A set of queries

Relevance judgments

You will be asked:

By the end of this working group, each team will have to develop one end-to-end retrieval pipeline that:

1. Processes the queries
2. Indexes the collection
3. Retrieves eligible clinical trials