Introduction to Clinical Text

Personal medical records contain important information on an individual's health. For example, medications, immunization records lab results, and screening due dates. Many medical professionals are interested in extracting such information from clinical text. However, a great deal of such information is not structured in a table with rules and columns, but instead can be classed as free form text. Unfortunately, processing text in an automated fashion and extracting meaning from it, is very challenging, mainly due to the ambiguity of natural language. Also, it is a complex task that requires several other tasks to be carried out beforehand. However, natural language processing methods can be used to process, analyze, and interpret clinical text, allowing us to answer important questions regarding an individual's health. A specific example of clinical texts can be found in pathology reports. A pathology report is a document that contains the diagnosis determined by examining cells and tissues under a microscope. And may also contain a description of the size, shape, and appearance of a specimen as seen by the naked eye. Pathologists examine samples for abnormalities, but quite often these tests are done to confirm that everything is okay. For instance, these tests are used for preventative screenings. Preventative screenings are important as they can help with the early detection of potentially fatal conditions. An individual's screening results are recorded in a pathology report. Pathology reports also play an important role in cancer diagnosis and the staging of cancers. The staging of a tumor determines the extent of cancer within the body and whether it has spread. This allows for a more informed decision to be made when considering treatment options. How can the retrieval of clinical text information be improved? Well, natural language processing methods enable relevant information from clinical text to be retrieved in a timely manner, and this is an important step towards precision medicine. In the next few videos we are going to talk about natural language processing tasks, relating them to clinical text, such as a pathology report and computational methods used in natural language processing.