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دائـــرة علـــم الحاســـوب

تتشرف بدعوتكم لحضور محاضرة عامة بعنوان:

"Predictive Modeling and Natural Language Processing in Healthcare"

يقدمهـــا

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شركـة أمــازون

وذلك يوم الثلاثاء الموافق 19 حزيران 2019، في تمام الساعة الواحدة بعد الظهر

قاعة Masri411 (قاعة اجتماعات مبنى منيب رشيد المصري – تكنولوجيا المعلومات)

Abstract:

Electronic health records (EHR) contain a wealth of patients' data ranging from diagnoses, problems, treatments, and medications to imaging and clinical narratives such as discharge summaries and progress reports. Structured data is important for billing, quality, and outcomes. On the other hand, narrative text, such as physician's notes, discharge summaries, test results, and case notes, is more expressive, more engaging, and captures the patient's story more accurately.

Therefore, to have a clear perspective on patient conditions, narrative text should be analyzed; however, manual analysis of massive numbers of narrative text is time consuming, labor intensive, and prone to errors. Hence, the need for automated algorithms to analyze unstructured text, which is the focus of this talk.

In this talk, I will start by presenting applications of predictive modeling in healthcare, including disease prediction, mortality prediction, and patient clustering. Those predictive models are trained on structured clinical data. I will then discuss natural language processing techniques that can analyze unstructured text in the clinical domain. I will talk about the data annotation pipeline, data selection, active learning, and deep-learning-based architecture for Named Entity Recognition to extract clinical entities such as patient medical conditions, medications, treatments, and lab reports from the unstructured text. This extracted information can later be combined with structured data to build more accurate predictive models, which I will demonstrate using mortality prediction.

حضوركم تشريف لنا ودعم للنقاش