

Abstract (บทคัดย่อ)

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**Project Title : Causality Knowledge Graph Construction from Thai Text data for
Supporting Why-Question**

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เอกสารภาษาไทยเพื่อสนับสนุนการตอบคำถามเหตุและผล

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Abstract

Causality knowledge expressed by a graph, especially in the graphical model, is essential to comprehend clearly all paths of effect events in causality for basic diagnosis. This research focuses on determining the effect boundary using a statistical based approach and patterns of effect events in the graph whether they are consequence or concurrence without temporal markers. All necessary causality events from texts for the graph construction are extracted on multiple clauses/EDUs (Elementary Discourse Units) which assist in determining effect-event patterns from written event sequences in documents. To extract the causality events from documents, it has to face the effect-boundary determination problems after applying verb pair rules (a causative verb and an effect verb) to identify the causality. Therefore, we propose Bayesian Network and Maximum entropy to determine the boundary of the effect EDUs. We also propose learning the effect-verb order pairs from the adjacent effect EDUs to solve the effect-event patterns for representing the extracted causality by the graph construction. The accuracy result of the explanation knowledge graph construction is 90% based on expert judgments whereas the average accuracy results from the effect boundary determination by Bayesian Network and Maximum entropy are 90% and 93%, respectively.

Keywords: Elementary Discourse Unit, explanation knowledge graph, causality boundary, effect-event pattern