



CPS Paper

A Meta-Model for Predicting the Quality of Knowledge Elicitation Sessions

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Submission ID: 417

Reference Number: 417

Presentation File

abstracts/ottawa-2023_6d7d49f3d4a750409ef34af39fd2bf90.pdf

Brief Description

Capitalizing on expert knowledge can be useful for a company.

It can be for transmitting all the know-how on a given field, incorporating technical aspects for decision making, or building causal models for doing predictions.

This knowledge can be represented through a Bayesian Network [1] to introduce uncertainty on the phenomenon, and, combined with Data, its performance can be improved.

Elicitation is done thanks to sessions where experts works together to build models with a facilitator and a modeler.

It is asked the experts to be available for a given amount of time, which can be large (several days) and with a risk that at the end of the sessions, they will not be able to have a satisfying tool.

In the context of multi-project management, we propose a tool to assess the probability of success of Elicitation sessions on a given problem.

This tool is obtained thanks to the Elicitation of a Bayesian Network [1] (meta-model), quantified with prior distributions.[1] Probabilistic Graphical Models: Principles and Techniques.

D.

Koller, and N.

Friedman.

Adaptive computation and machine learning MIT Press, (2009)

Abstract

Capitalizing on expert knowledge can be useful for a company. It can be for transmitting all the know-how on a given field, incorporating technical aspects for decision making, or building causal models for doing predictions. This knowledge can be represented through a Bayesian Network [1] to introduce uncertainty on the phenomenon, and, combined with Data, its performance can be improved. Elicitation is done thanks to sessions where experts works together to build models with a facilitator and a modeler. It is asked the experts to be available for a given amount of time, which can be large (several days) and with a risk that at the end of the sessions, they will not be able to have a satisfying tool. In the context of multi-project management, we propose a tool to assess the probability of success of Elicitation sessions on a given problem. This tool is obtained thanks to the Elicitation of a Bayesian Network [1] (meta-model), quantified with prior distributions.

After a brief description of the context (elicitation modeling prioritization), we explain how we were been able to elicit the meta-model. First, a theoretical justification of the Bayesian network structure & nodes combination functions is done. Then, we detail the different dimensions and the output, followed by a demo of the app that has been generated with the model.

[1] Probabilistic Graphical Models: Principles and Techniques. D. Koller, and N. Friedman. Adaptive computation and machine learning MIT Press, (2009)

Figures/Tables

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