

Dissertation Title	A Classifier of Charges and Range Of Punishments under Criminal Law of Civil Law System: Cases in the Offences against Life and Body Section
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Candidate	Mr. Sotarath Thammaboosadee
Dissertation Advisor	Asst. Prof. Dr. Bunthit Watanapa.
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Abstract

Judicial reasoning is one of the most complex and challenge legal activities. This dissertation proposes a classification model for identifying charges and range of punishments specific to the offences against life and body section in the criminal code of Thailand which relies on the Civil Law system. The dissertation proposes the extension of Global Justice XML data model for verdicts collection. The case facts in XML format are then transformed into a relational structure to build the proposed two stage classifiers. The first classification stage identifies a set of diagnostic issues from the case facts using a set of Artificial Neural Networks (ANN) modularized in hierarchical order. The second stage is to identify a set of legal elements from the diagnostic issues employing a set of C4.5 decision tree classifiers. These linked modular networks of ANNs and decision trees form an effective system in terms of determining power and ability to trace or infer the relevant legal reasoning of such a determination. Isolated and system integrated experiments have been conducted to measure the performance of the proposed system. The overall accuracy of the integrated system is up to 90%. A true case is also demonstrated to show the effectiveness of the proposed system. The final result, which is a set of projected law articles, is systematically mapped to find the final sentence with a range of punishments by a criminal ontology. The proposed system in this dissertation can be of benefit to anyone who prefers to learn how the sentences are judged, bounded by the basis on the sample data of this study.

Keywords: Legal Reasoning / Criminal Law / Civil Law System / Data Mining / Decision Tree / Neural network / XML documents / Legal Ontology