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Investigation on Methods for Identifying Core Patents

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Patent publications could be materials for a person doing research to know the trends of research and development as well as the paper could be, because they show a new technology to the public. By the way, information about patents are rapidly increasing and specializing. Therefore it is difficult that experts about specific area read technical literatures and get a bird's eye view of technical area about patents in its entirety. And it is difficult that experts grasp relation for particular element technique about specific technical area, as research brackets are specializing. Therefore I propose a method for identifying core patents on specific technical area. This thesis describes investigation of methods for analyzing technological trends based on patent information: (1) methods for extracting and classifying technical terms, (2) methods for converting patent terms to simple terms, (3) methods for visualizing technological trends, (4) methods for identifying centrality in the visualized network. The investigation clarified that recommendation by experts and analyzing scientific landscape are important for analyzing technological trends based on patent information. This thesis proposes to use precedence of patent applications, the number of citations, and the number of characters used in some part of a patent claim as a quantitative indicator for identifying core patents. I conducted an experiment to confirm the effectiveness of the quantitative indicator and found that the performance of the precedent of patent applications and the number of characters used in some part of a patent claim were best.