

## C215609 : MAJOR MECHANICAL ENGINEERING

KEY WORD: EXPERT SYSTEM / EXPERT SYSTEM SHELL / MECHANICAL SYSTEM DIAGNOSIS

VINAI SATHTACHOTINUN : EXPERT SYSTEM SHELL WITH CERTAINTY FACTOR  
FOR MECHANICAL SYSTEM DIAGNOSIS.      THESIS ADVISOR :

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In any mechanical works when complicated problems arise, the one who is responsible for making a decision often needs some advice from an expert specialist. This research, the expert system shell with certainty factor for mechanical system diagnosis, is a computer program developed as a tool for building an expert system. The outcome of the consultation has certainty factors in percentage to support each decision.

The system architecture consists of the backward-chaining inference engine with depth-first search and multi-knowledge bases link together automatically. The program runs on a 16 bit IBM compatible personal computer with minimum 640 KB RAM, and a monochrome or color monitor. The program has good natural language interface with the user. Moreover, the program facilities include the feature of Create, Update, Edit and Display the knowledge bases with explanations for each step of the program. It is a proper tool for building any other expert systems for mechanical system diagnosis whose knowledge bases can be arranged in the same structure as the examples demonstrated herein. The "why" and "how" features are built in the program as standard.