

Applications of Soft Computing to Diagnosis and Prescription in Oriental Medicine

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The current development of Intelligence Technologies makes it come true that decision support systems are constructed in the health care services, especially in the processes of diagnoses and treatment prescriptions which tend to be subjective. This dissertation presents applications of Soft Computing Techniques to the diagnosis and prescription problems in Oriental Medicine. First, the dissertation proposes three models using a fuzzy reasoning for diagnoses, neural networks for prescriptions and self-organizing maps for visualization of herbal treatment effects. Second, the two applications: *Rheumatism Evaluation and Treatment System (RETS)* and *Herbal Effect Visualization System (HEVS)* using the proposed models are presented. Inputs to the models for the diagnoses and the prescriptions are severities of symptoms observed on patients, and outputs are seriousness of disease states and herbal treatment prescriptions. Inputs to the model for the herbal effect visualization are herbal treatment prescriptions, and an output is a map that shows a distribution of disease states influenced by the input prescriptions. Finally, implementations and evaluations of the applications are presented and then their usefulness in practice is described.