E1-19: Naturalistic knowledge elicitation for expert systems

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Intelligent software has been an increasingly popular idea for problem solving in the modern world. Intelligent techniques such as expert systems, genetic algorithms and neural networks are capable of emulating some characteristics of human intelligence. Among the intelligent techniques, the expert systems or Knowledge-Based Systems mimic the behaviour of problem solving by human experts. However, the construction of expert systems is s crucial activity. There is very little guidance to develop expert systems and it begins with acquisition of knowledge for the system.

A usual interview process mainly does knowledge acquisition for expert systems. In this process the person called *knowledge engineer* interviews the domain expert and elicits the knowledge required for constructing an expert system. However, it is commonly cited that such an interview process causes the knowledge engineer to impose his view of the domain on the expert. This skews the knowledge engineer to impose his view of the domain on the expert. This skews the knowledge being modelled for the system. So there have been several research works to remove the knowledge engineer from the elicitation process. It is usually achieved by developing intelligent automated elicitation tools that directly interact with domain expert without a knowledge engineer.

Unfortunately, when software interviews a person, the expert feels a lack of emotional contact with the system. So the interaction becomes very unrealistic. This leads the expert to become fed-up with the system very soon.

In addressing this issue, we have developed an approach which determines expert's emotion and reacts accordingly. The approach exploits some characteristics of human emotions as described in Buddhist theory of mind. The approach is designed to develop as a software tool, which can be integrated with an automated knowledge acquisition tool.