***Research of Standard Handwritten English Letters Recognition System Based on the PSO-BP neural network***

Q1.What are you trying to do? Articulate your objectives using absolutely no jargon.

1. Indoor tracking and navigation is a fundamental need for pervasive and context-aware smartphone applications. Although indoor maps are becoming increasingly available, there is no practical and reliable indoor map matching solution available at present. We present Map Craft, a novel, robust and responsive technique that is extremely computationally efﬁcient (running in under 10 ms on an Android smartphone), does not require training in different sites, and tracks well even when presented with very noisy sensor data. Key to our approach is expressing the tracking problem as a conditional random ﬁeld (CRF), a technique which has had great success in areas such as natural language processing.

Q2. How is it done today, and what are the limits of current practice?

The BP neural network is typical of feedforward neural networks. Using PSO algorithm is to optimize BP neural network, with particle swarm algorithm to optimize network initial parameter optimization, training network weights and threshold instead of the gradient descending method to avoid network in training local minima, so as to improve the network training speed.

Q3. What's new in your approach and why do you think it will be successful?

The Particle swarm optimizer is intelligent searching in space to find the optimal solutions through the cooperation and competition between particles, being based on the theory of swarm intelligence global optimization algorithm. Its advantage is that simple operation and easy achievement.

Experimental results show that particle swarm algorithm used for the optimization of the neural network has a faster convergence speed, and simpler algorithm.

Q4. Who cares? If you're successful, what difference will it make?

With the gradual growth of internet as a mode of communication, the pace of work at companies has hastened and the turnaround time has reduced by a great extent. Due to the unavailability of adequate input systems, forms filled up by hand is still a mode of accepting data in most parts of the world. As a result, it is difficult to send data in handwritten form over a short period of time. To get rid of this problem, efforts have been made to develop handwritten recognition for retail forms to convert the structured handwritten content into a digital form of text which can be realized by any computer. This reduces a lot of hard work that goes into typing the data from the structured handwritten content into a computer. The conversion process using handwritten recognition for retail forms is automated and requires supervision from a single person.

5. What are the risks involved?