Effective obstacle avoidance is the most important factor in intelligent car system which requires good reliability in making decision to avoid obstacle at the front of the car. This research uses machine vision system to differentiate between obstacles and other environmental items and applies the principle of stereo vision to find the distance to the object in order to design the intelligent car avoiding behavior, which has Ackermann's turning pattern. PID controller is used in controlling the steering wheel position as well as controlling the car speed to be suitable for the effective turning.

The machine vision experimental results show that the system can find accurate distance to the obstacle resulting in the ability to design the appropriate turning behavior of the intelligent car. The PID controller can control the turning angle of the steering wheel accurately and can control the car speed within the $\pm$ 0.1 kilometer / hour margin only.

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