Yang et al. describes a fuzzy motion planning strategy enabling autonomous mobile robots to navigate an environment containing obstructions, from their position to a given waypoint. Existing navigation algorithms use wall-following to circumnavigate obstructions in search for a path the end goal waypoint. This results in sub-optimal path choice when robots’ wall following draw them away from corners, which if turned, would reveal direct paths to their goal, and instead through convoluted paths. By using a multi-layered fuzzy approach to navigation, Yang et al. were able to synthesize obstacle avoidance with mid-range waypoint navigation to choose paths based on a more natural ‘traversability’. The mid-range waypoint is generated by the first layer incorporating the position of the end goal waypoint with long range (15cm – 3m ultrasound) sensor data. Activation of sensors, oriented radially around the robot, corresponds to the activation of untraversable versus traversable conditions for the fuzzy rule corresponding to the range of angle of view that sensor monitors. Paths with obstructions in front of the robot result in higher untraversability than ones with obstacles beside. This compels the robot to rotate, aligning itself with long runs of open terrain, where it can travel quickly, rather than crawling along a wall. This behavior on its own is insufficient to deal with internal corners and concavities a robot must navigate. When a robot is in a corner with the end goal on the other side of the wall forming the corner, it may wander back and forth with subsequent mid-range point calculation if the long range sensors cannot see around the walls. If the robot detects that its new mid-range waypoint will result in a large angular course adjustment, indicating that the robot would turn back the way it came and fall into deadlock, then the robot will continue along the wall. Wall following is then used in the second fuzzy navigation layer for wall following and avoidance. Short range infrared range sensors are used as virtual bumpers. Their input triggers untraversability conditions, which when combined with those of the first layer, result in the final mid-range waypoint, and disallow the robot to collide with walls. They compared their method to an existing direction-based reactive fuzzy algorithm, and the speed-based reactive fuzzy algorithm. They found that their layered approach enabled the robots to navigate static environments more quickly than the other navigation algorithms. This is because the robots spends more time navigating close to obstacles with the other approaches. The layered approach is more similar to how humans navigate to a goal around obstacles, moving in the general direction of the goal, going around any obstacles, rather than following obstacles to the goal.