

DESIGN AND EVALUATION OF A PNEUMATICALLY DRIVEN ANTHROPOMORPHIC GRIPPER FOR SERVICE ROBOTICS

A. Kargov, H. Klosek, C. Pylatiuk, S. Schulz, G. Bretthauer
(Institute for Applied Computer Science, Forschungszentrum Karlsruhe, Germany)

In this paper the design and technical characteristics of an artificial gripper with human-like appearance and manipulation abilities are discussed. The anthropomorphic appearance is realized in the size, the number of fingers, the placement and motion of the thumb and the proportions of the link lengths. Pneumatically driven flexible fluidic actuators are used for the actuation of the gripper. A high dexterity of the manipulator is achieved and the most of human grasping types can be performed. Experiences gained from using gripper hand prototypes on a humanoid service robot are outlined.