HOMEWORK 06: Robotic Configurations & Applications

1.) Recommend the best robot configuration for each of the following situations:

a) Loading and unloading a container ship at a port. Containers are stacked in rectangular array on the dock and on the deck of a ship.

b) Removing plastic parts attached to a sprue from an injection molding machine, and then placing the sprue (and part tree) between the platens of a trim press before triggering the press.

c) (Anti-) Rust-coating the underside of certain car models within the service bay of an automobile dealership. The robot is programmed by having an experienced technician perform lead-through training with the spray apparatus.

d) Removing mother-board components and edge-connected daughter-boards for a desktop computer recycling station.

e) Performing automatic storage and retrieval system operations within a converted grain silo.

f) Polishing the concave sides of spherical mirrors and lenses for large, space-based telescopes for NASA and other space agencies.