LOZANO-PEREZ83
Lozano-Perez, T.;
Robot Programming;
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In his article, Lozano-Perez identifies the requirements for advanced robot programming systems, and describes the major approaches to the design of these systems.

The article begins with a presentation of a typical industrial robot application. The application invloves two robots cooperating to assemble pumps from parts arriving in random order and orientation on two moving conveyor belts. The author points out that the application illustrates such major aspects of robot programming as sensing, world modeling, motion specification, and flow control. A thorough discussion of these aspects follows the presentation of the application.

Having described the major aspects of robot programming, Lozano-Perez proceeds with a survey of robot programming systems. The systems are partitioned into three classes: (1) those who employ guiding, i.e. manually moving robot to each desired position, and recording the internal joint coordinates corresponding to that position, (2) the ones that involve robot-level programming, i.e. programming the robots by means of primitive commands such as READ-SENSOR-A, OPEN-FINGERS-BY-ONE-INCH, and (3) the ones that do task-level programming, which is programming by specifying high level commands such as INSERT-PIN-INTO-HOLE.

The paper ends with conclusions and suggestions for future research.

The article is well-written and easy to read. It introduces all the necessary terminology, explains the key ideas in detail, and has a good structure. A good discussion of various provides a motivation of research in the area of robot programming.