

Tomos Williams

1 On the Use of Force Sensing in Assembly Robot behavioural Modules

PhD Thesis, 1998

From the abstract: This thesis presents a novel approach to the development of robot manipulator force controllers for industrial assembly operations based on behaviour-based methodologies. Robotic manipulators have not fulfilled their early expectations with regards to their adoption in industrial assembly plants. This is mainly due to manipulators' inability to deal with inevitable position uncertainties in assembly operations. Equipping robots with the ability to react to contact forces and alter their trajectories to achieve mating operations has proved to be problematic.

In trying to address this failing of traditional, control theory based strategies, this research is drawn towards the field of behaviour-based robotics and aims to transfer some of its properties to the domain of active force control of robotic manipulators.

1.1 Publications

- [*Robot Control 2000 \(SYROCO'00\)*](#)
- [*Int. Conf. Systems, Man and Cybernetics*](#)
- [*International Workshop on Advanced Robotics and Intelligent Machines*](#)

Tom is now in the Division of [Imaging Science & Biomedical Engineering](#), [University of Manchester](#), where he can be [contacted](#).