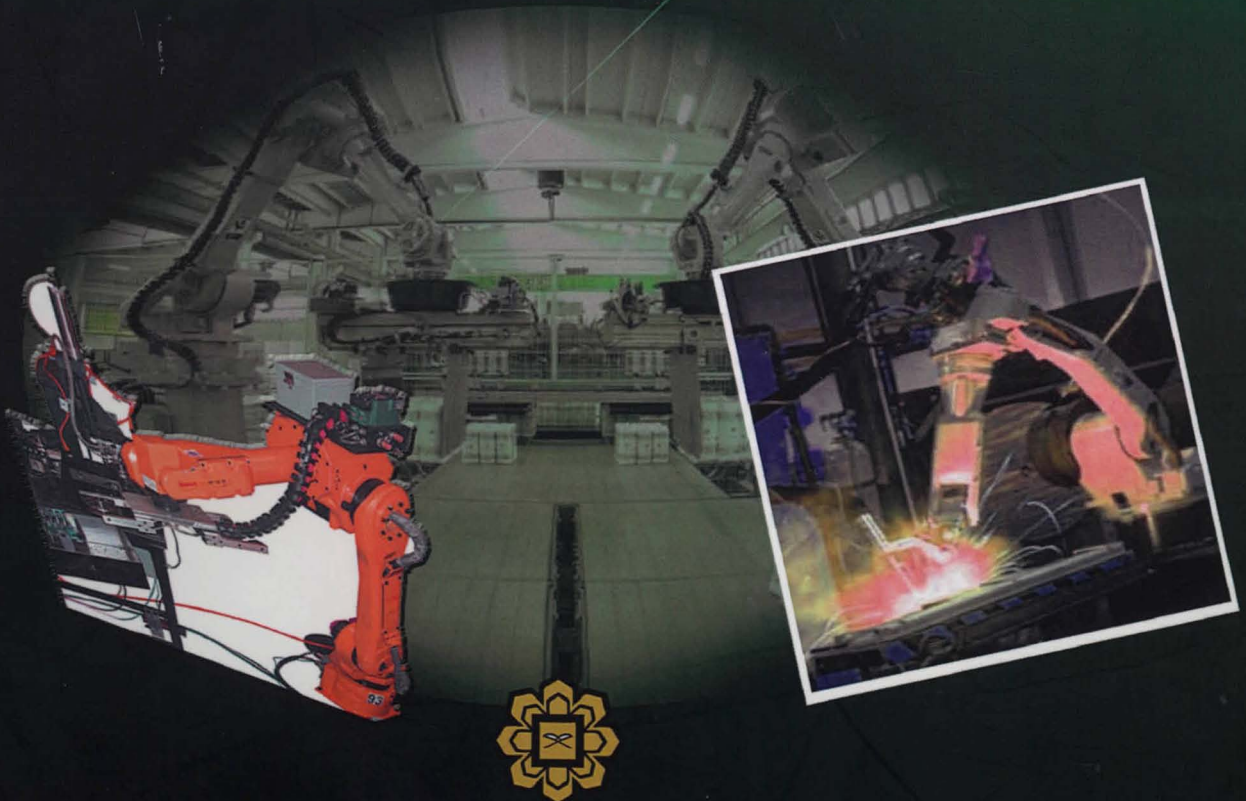


# MECHATRONICS BOOK SERIES

## ROBOTICS AND AUTOMATION

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Rini Akmeliawati  
Wahju Sediono  
Nahrul Khair Alang Md. Rashid



IIUM PRESS

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

# **MECHATRONICS BOOK SERIES: ROBOTICS AND AUTOMATION**

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## **Editors**

Rini Akmeliawati  
Wahju Sediono  
Nahrul Khair Alang Md. Rashid



**IIUM Press**

Published by:  
IIUM Press  
International Islamic University Malaysia

First Edition, 2011  
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Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Rini Akmeiliawati, Wahyu Sediono & Nahrul Khair Alang Md. Rashid:  
Mechatronics Book Series Robotics and Automation

ISBN: 978-967-418-152-9

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM  
(Malaysian Scholarly Publishing Council)

Printed by :  
**IIUM PRINTING SDN.BHD.**  
No. 1, Jalan Industri Batu Caves 1/3  
Taman Perindustrian Batu Caves  
Batu Caves Centre Point  
68100 Batu Caves  
Selangor Darul Ehsan  
Tel: +603-6188 1542 / 44 / 45 Fax: +603-6188 1543  
EMAIL: iiumprinting@yahoo.com

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### Mechanical Design of a Person Following Robot

Tarik Bin Alamgir<sup>1, a</sup>, Ibrahim Jawad Alfar<sup>2, b</sup> and Muhammad Mahbubur Rashid<sup>3, c</sup>

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#### 8.1 Introduction

Person-following is a notable talent that obliges to be recognized by a service robot while it requires completing some human-related tasks. The robot has to stay at a certain safe distance as of the person that is being tracked and simultaneously be in motion in a smooth way which does not show frightening to the person. This chapter deals with the general idea of how the person-following robot based on Fuzzy algorithm project has been implemented. There are many ways to build a mobile robot among this most common systems are wheeled, track and leg robot. In this chapter, a wheel robot is build which is a three wheeler robot, whereas it has two wheels in the back side and one ball casters wheel in the front; makes a good third wheel for 3 wheeled robots.

#### 8.2 Model design using CAD

Before any mechanical development is started, the CAD drawing is essential in projecting shape of the robot. This design is capable of projecting different views such as top view, front view, side view and isometric view of a model. The isometric view gives a three dimensional view which help us in realizing the original shape of our robot virtually.

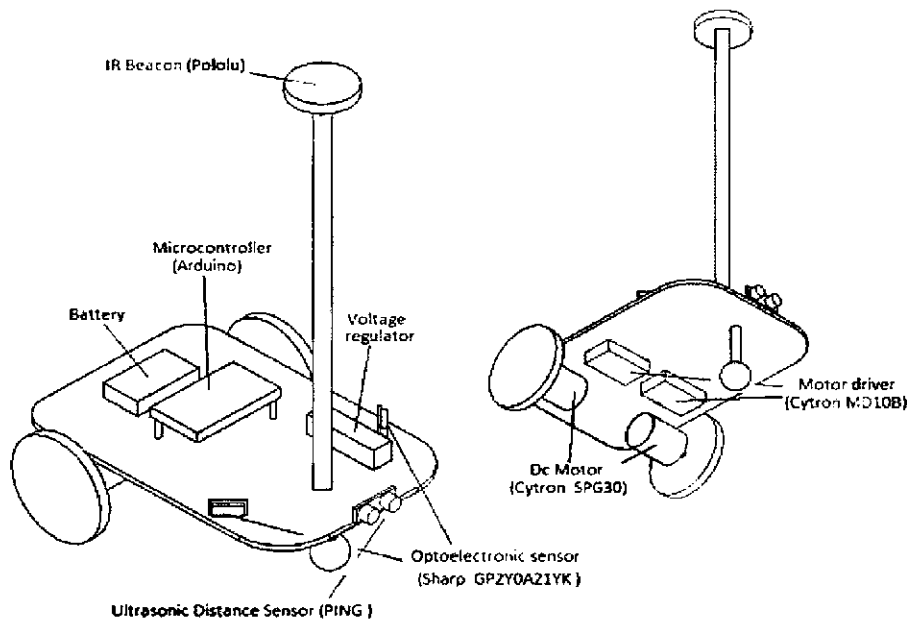


Fig. 1 Isometric view of the robot

#### 8.3 Wheel selection and its arrangements

A three wheeler vehicle or car, further considered as a tri-car, is an vehicle comprise of an exclusive wheel in the dash for direction and two at the forge for power, or two in the dash for maneuvering and one in the forge for power. As a result of its managing supremacy, progressively further