	Majid Ghaniee Zarch: I was born in December, 1986, Yazd, Iran. I received my B.Sc. degree in control engineering from Ferdowsi University, Mashhad, Iran in 2009, and M.s.c in control engineering from K.N.Toosi University of Technology, Tehran, Iran in 2012.
Research Interest:	-Fault Detection and Identification -Fault Tolerant Control -Fuzzy Systems
Thesis Title:	Design of Fault Tolerant Control Systems by Applying Parallel Distributed Fuzzy Controller

Abstract:

A passive Fault Tolerant Control (FTC) system is developed to deal with sensor faults in a rotary inverted pendulum. A Takagi-Sugeno (T.S) fuzzy model is used to model physical behavior of a rotary inverted pendulum. Based on the resulted model, a controller using Parallel Distributed Compensation (PDC) approach is designed. Also, based on parity relations for linear systems, a new method for residual generation is proposed to detect faults in a class of nonlinear systems that can be modeled by T.S fuzzy system. Performance of designed system examined through simulation and implementation on real system. Simulation results show that when a presumed fault occurs, the system can correct it successfully. Effectiveness of the proposed method is proved through implementation on rotary inverted pendulum module of Quanser.

Supervisors:	Dr. Mohammad Teshnehlab Dr. Mahdi Aliyari Shoorehdeli
Contact:	majidghaniee@gmail.com