Mehrdad Heydarzadeh

	Merhdad was born in 1984 and finished high school at Alborz high school which is honored as the best high school of Iran. After that he went to Shahed university press and studied Electrical Engineering. He finished his Bachelor of science with honors in Electronics major and he was first grade student. His bachelor thesis subject was "Human Identification Using Side Image of Ear". After that he went to K.N.T.U and continued his education in Mechatronics Engineering major and He graduated from Electrical Engineering faculty of K.N.T.U in 2011 with GPA of 18.05 out of 20.His master thesis was about FDI in DAMADICS benchmark and he developed a new method for this plant based on Wavelet and SVM.
Research Interest:	-Statistical Signal Processing -Wavelet and Multi Resolution Analysis
	-System Identification
	-Pattern Recognition

Thesis Title:

DAMADICS FDI based on Wavelet and LS-SVM

Abstract:

In this thesis a novel approach was proposed for FDI of industrial processes. At first step the normal behavior of DAMDICS system is identified by LS-SVM Wiener process and then using this predictor model, residual signals are obtained then using some filters which are applied to residuals; it is possible to talk about the presence of fault in system. For isolating faults, an MRA issue was applied. Using MODWT, the residuals are analyzed and the variances of wavelet coefficients are used as features for a classifying system. Before feeding these features to classifier a LDA transform is applied to reduce the dimension of features after that a Least Square Support Vector Machine is assigned to classify these features. High rate of true detection and isolation approves the success of this method.

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