

readmeFIE

Project is to examine the type I FLS, singleton, only.  
Determine if it is performing as explained in class.  
Show example calculations.

=====

Type-1 Fuzzy Logic Systems

Queries about the software can be made to "qilian@sipi.usc.edu".

Copyright (c) 2000 by the University of Southern California. All rights reserved.

This software is experimental in nature and is provided on an "as is" basis only. The University SPECIFICALLY DISCLAIMS ALL WARRANTIES INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This software may be used for non-commercial purposes only, so long as this copyright notice is reproduced with each such copy made.

The software in this folder focuses on the computations and designs of type-1 FLSs.

Each M-file is keyed into a chapter of the book Uncertain Rule-Based Fuzzy Logic Systems: Introduction and New Directions, by Jerry M. Mendel, and published by Prentice-Hall, 2000.

Description of M-files

Here, we provide brief descriptions of the M-files that appear in this folder. For more help on any specific file, type "help (filename)" at MATLAB prompt.

I. Singleton Mamdani Type-1 FLS

sfls\_type1.m: Compute the output(s) of a singleton type-1 FLS when the antecedent membership functions are Gaussian. (Chapter 5)

train\_sfls\_type1.m: Tune the parameters of a singleton type-1 FLS when the antecedent membership functions are Gaussian, using some input/output training data. (Chapter 5)

svd\_qr\_sfls\_type1.m: Rule-reduction of a singleton type-1 FLS when the antecedent membership functions are Gaussian, using some input/output training data. (Chapter 5)

=====

Following may be of interest in a second course.

II. Non-Singleton Mamdani Type-1 FLS

## readmeFIE

nsfls\_type1.m: Compute the output(s) of a non-singleton type-1 FLS when the antecedent membership functions are Gaussian and the input sets are Gaussian. (Chapter 6)

train\_nsfls\_type1.m: Tune the parameters of a non-singleton type-1 FLS when the antecedent membership functions are Gaussian, and the input sets are Gaussian, using some input/output training data. (Chapter 6)

svd\_qr\_nsfls\_type1.m: Rule-reduction of a non-singleton type-1 FLS when the antecedent membership functions are Gaussian, and the input sets are Gaussian, using some input/output training data. (Chapter 6)

### III. TSK FLS

tsk\_type1.m: Compute the output(s) of a type-1 TSK FLS (type-1 antecedents and type-0 consequent) when the antecedent membership functions are Gaussian. (Chapter 13)

train\_tsk\_type1.m: Tune the parameters of a type-1 TSK FLS (type-1 antecedents and type-0 consequent) when the antecedent membership functions are Gaussian, using some input/output training data. (Chapter 13)