Lógica Difusa Python

Dr. Misael López Ramírez

Febrero 2023

Problema A: Control simple de la mezcla de flujo de aire


```
>>> import skfuzzy as fuzz
```

`skfuzzy.addval` (interval1, interval2)	Add intervals interval1 and interval2.
`skfuzzy.arglcut` (ms, lambdacut)	Determines the subset of indices mi of the elements in an N-point resultant fuzzy membership sequence ms that have a grade of membership >= lambdacut.
`skfuzzy.cartadd` (x, y)	Cartesian addition of fuzzy membership vectors using the algebraic method.
`skfuzzy.cartprod` (x, y)	Cartesian product of two fuzzy membership vectors.
`skfuzzy.centroid` (x, mfx)	Defuzzification using centroid (center of gravity) method.
`skfuzzy.classic_relation` (a, b)	Determine the classic relation matrix, `R`, between two fuzzy sets.
`skfuzzy.cmeans` (data, c, m, error, maxiter[, ...])	Fuzzy c-means clustering algorithm [1].
`skfuzzy.cmeans_predict` (test_data, ...[, ...])	Prediction of new data in given a trained fuzzy c-means framework [1].
`skfuzzy.continuous_to_discrete` (a, b, ...)	Converts a continuous-time system to its equivalent discrete-time version.
`skfuzzy.contrast` (arr[, amount, split, normalize])	General contrast booster or diffuser of normalized array-like data.
`skfuzzy.dcentroid` (x, mfx, x0)	Defuzzification using a differential centroidal method about x0.
`skfuzzy.defocus_local_means` (im)	Defocusing non-normalized image `im` using local arithmatic mean.

https://pythonhosted.org/scikit-fuzzy/api/skfuzzy.html

Reglas para los problemas planteados

```
import numpy as np
import skfuzzy as fuzz
import matplotlib.pyplot as plt

# Rango de la calidad de la comida
x_qual = np.arange(0, 11, 1)

# Rango de la calidad del servicio
x_serv = np.arange(0, 11, 1)

# Rango del porcentaje de propina
x_tip = np.arange(5, 26, 1)
```

GRACIAS!!!