

Banana database:

Attribute 1	Attribute 2	Class
2.22	-2.04	-1
-0.103	-1.71	-1
0.196	-1.71	-1
-0.508	-1.7	-1
-0.362	-1.7	-1
-0.697	-1.69	-1
-0.335	-1.69	-1
-0.129	-1.69	-1
-0.826	-1.67	-1
-0.558	-1.67	-1
-0.126	-1.67	-1
0.105	-1.67	-1
-0.0958	-1.66	-1
-0.0339	-1.66	-1

-0.0272	1.86	1
0.169	1.86	1
0.534	1.86	1
0.605	1.86	1
-0.283	1.88	1
0.942	1.89	1
-0.0203	1.92	1
0.667	1.92	1
0.75	1.92	1
0.0809	1.93	1
0.101	1.93	1
-0.635	1.94	1
0.452	1.95	1
0.216	1.96	1
-0.153	1.97	1
-0.0999	1.97	1
0.168	1.97	1
-0.353	1.98	1
0.364	1.98	1
0.764	1.98	1
-6.89E-03	2	1
-0.0601	2.04	1
0.133	2.04	1
0.713	2.04	1
-0.119	2.06	1
0.0605	2.06	1
0.171	2.11	1
-0.0814	2.18	1
-0.308	2.19	1

Attribute 1:

Membership functions:

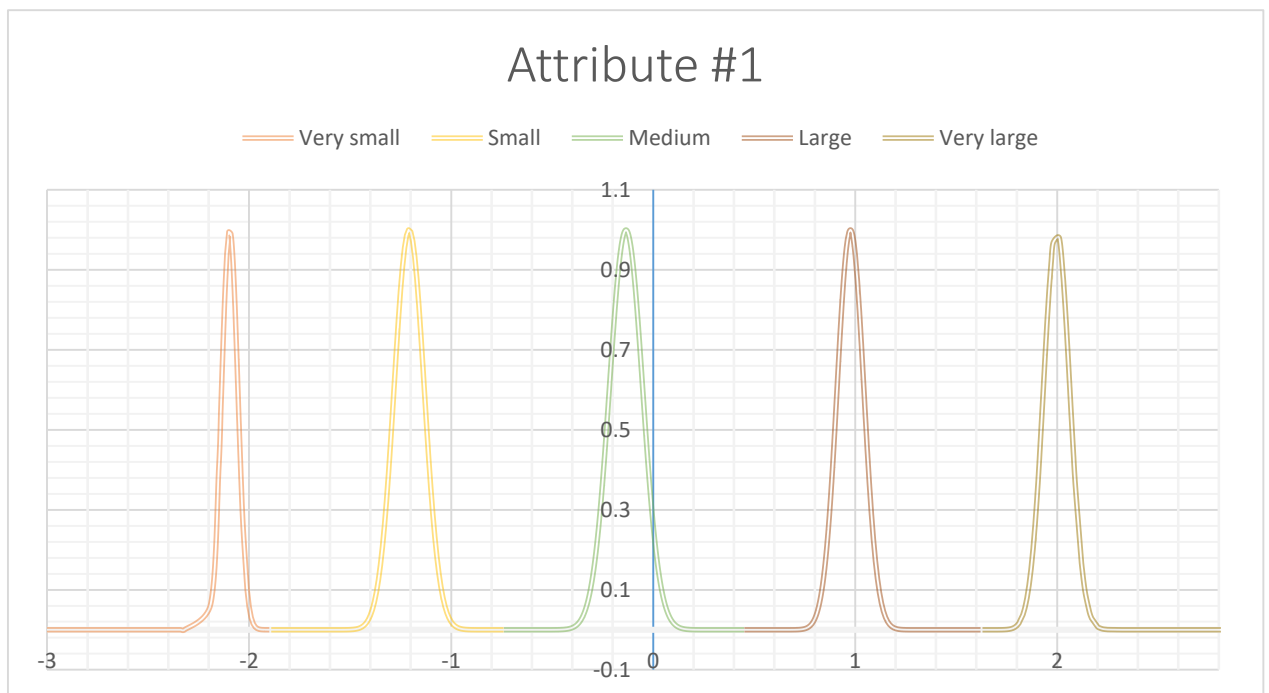
$$\text{Very small } f = e^{-\left(\frac{x+2.09603}{0.05683}\right)^2}$$

$$\text{Small } f = e^{-\left(\frac{x+1.20761}{0.105265}\right)^2}$$

$$\text{Medium } f = e^{-\left(\frac{x+0.13451}{0.116203}\right)^2}$$

$$\text{Large } f = e^{-\left(\frac{x-0.976095}{0.093193}\right)^2}$$

$$\text{Very large } f = e^{-\left(\frac{x-1.996647}{0.092057}\right)^2}$$



Attribute 2:

Membership functions:

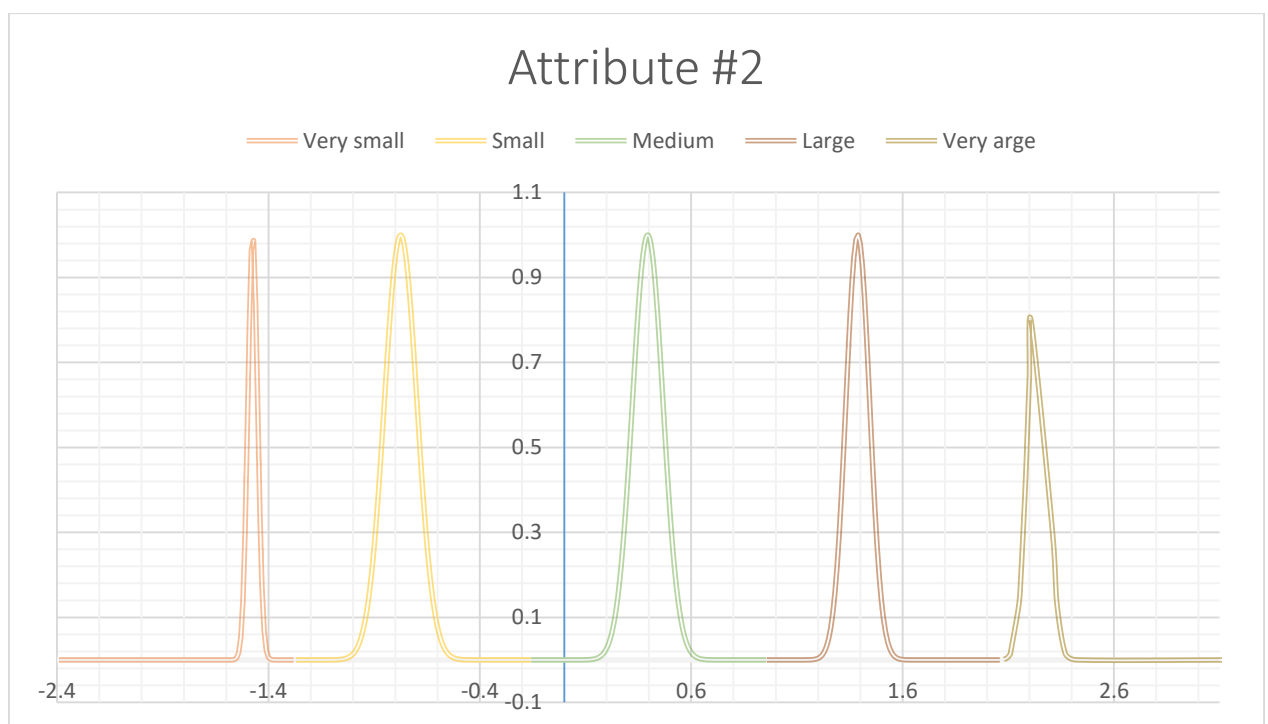
$$\text{Very small } f = e^{-\left(\frac{x+1.47377}{0.032943}\right)^2}$$

$$\text{Small } f = e^{-\left(\frac{x+0.77476}{0.108979}\right)^2}$$

$$\text{Medium } f = e^{-\left(\frac{x-0.393977}{0.102341}\right)^2}$$

$$\text{Large } f = e^{-\left(\frac{x-1.388358}{0.079547}\right)^2}$$

$$\text{Very large } f = e^{-\left(\frac{x-2.240526}{0.063172}\right)^2}$$



Rules:

- 1) If x_1 is small AND x_2 is large THEN Class (-1)
- 2) If x_1 is large AND x_2 is medium THEN Class (1)
- 3) If x_1 is very small AND x_2 is very small THEN Other

Validation:

Attribute 1	Attribute 2	Class 1	Class -1	Result
1.49	0.627	1	-1	Good
-0.583	-1.05	1	-1	Good
-0.807	1.12	-1	-1	Not Good
-0.683	1.38	1	-1	Good
0.0734	-1.62E-01	1	-1	Good
0.388	1.64	1	-1	Good
0.874	1.79	Other	-1	Not Good
0.584	0.679	1	-1	Good
1.42	0.374	1	-1	Good
-0.779	0.676	1	-1	Good
0.678	0.335	1	-1	Good
0.204	-1.06	1	-1	Good
1.43	0.498	1	-1	Good
-0.779	-1.2	1	-1	Good
-1.3	0.577	1	-1	Good
1.03	0.0331	-1	-1	Not Good
-0.532	-1.17	1	-1	Good
0.119	-1.28	1	-1	Good
1.53	-1.05	1	-1	Good
-0.481	-0.904	1	-1	Good
0.858	0.399	1	-1	Good
0.126	0.819	1	1	Not Good
-0.88	-1.27	1	-1	Good
0.145	-0.626	1	-1	Good
0.534	1.86	1	-1	Good
Success rate		92%	96%	84%