NOTATIONS

Fr-A Flow of water from room to part A
F_{A-B} Flow of water from part A to part B
P_A Pressure in part A
\delta P_A Change in pressure P_A
P_B Pressure in part B
t_1 Instant of time when U-tube receives increment of water
t_2 Transition time
t_3 Instant when state of equilibrium is achieved
Y Distance of ball from earth
V Velocity of ball
A Acceleration of ball
Q_1 Volumetric inflow rate
A Cross sectional area of the tank
t Level of liquid in the tank
e Error
v Position of valve
Q_2 Volumetric outflow rate
L_s Set point
i Integral of error
cv Valve coefficient
q Volumetric netflow rate
\rho Liquid density
a_g Acceleration of gravity
X Classical set of objects
x Member of set X
A Fuzzy set
\mu_A(x) Membership grade of x in A
A_{\alpha} \alpha- cut of A
U Union operator
A \cup B Union of sets A and B
h(R) Height of fuzzy relation R
R(X,Y) A fuzzy relation between X and Y
PoQ Composition of fuzzy relations P and Q

$P_a$ Atmospheric pressure

$P$ Pressure at the bottom of the tank

$y_i^h$ State of the $i$th neuron in the $h$th layer

$w_{ji}^h$ Weight of the connection from $i$th neuron in layer $h$ to the $j$th neuron in layer $h + 1$

$y_j^{h+1}$ State of the $j$th neuron in the $(h + 1)$th layer

$E(w)$ Least mean square error for a weight vector $w$.

$y_{j,c}^H(w)$ State of output node $j$ in layer $H$ in input output case $c$.

$d_{j,c}$ Desired state of node $j$ in case $c$.

$\epsilon$ A positive constant

$\alpha$ Momentum coefficient

$t$ Number of iteration currently in progress

$FV_{ji}$ Fuzzy value taken by antecedent $c_i$ in the $j$th rule