Abbreviations

ACF	**A**uto **C**orrelation **F**unction
ADF	**A**ugmented **D**icky **F**uller **T**est
ANN	**A**rtificial **N**eural **N**etwork
ARIMA	**A**uto **R**egressive **I**ntegrated **M**oving **A**verage
ELM	**E**xtreme **L**earning **M**achine
HMM	**H**idden **M**arkov **M**odel
KNN	**K**- **N**earest **N**eighbors **A**lgorithm
LOGSIG	**L**og- **S**igmoid **T**ransfer **F**unction
MOGA	**M**ulti **O**bjective **G**enetic **A**lgorithm
NMPIW	**N**ormalized **M**Mean **P**rediction **I**nterval **W**idth
PACF	**P**arcial **A**uto **C**orrelation **F**unction
PICP	**P**rediction **I**nterval **C**overage **P**robability
RADBASN	**N**ormalized **R**adial **B**asis **T**ransfer **F**unction
RMSE	**R**oot **M**ean **S**quare **E**rror
TANSIG	**H**yperbolic **T**angent **S**igmoid **T**ransfer **F**unction
TBF	**T**ime **B**etween **F**ailure
UDD	**U**ltimate **D**ebian **D**atabase

Symbols

ε_t	Residual term
β_p	Auto Regressive Parameter
Φ_q	Moving Average Parameter
d	Difference Parameter for ARIMA
F_l	Linear Predicted Component
F_n	Non-Linear Predicted Component
$A(t)$	Actual Value
$F(t)$	Forecasted Value
Con_I	Increasing Contributors
Con_D	Decreasing Contributors
Com_I	Increasing Commits
Com_D	Decreasing Commits
HI	Hi Increase in Bugs
SI	Slow Increase in Bugs
I	Insignificant Change in Bugs
HD	High Decrease in Bugs
SD	Slow Decrease in Bugs
X	Transitions Absent for Markov Model
S	Number of States In Model (HMM)
M	Number of Distinct Observations(HMM)

a_{ij}	Transition Probability(HMM)
$b_j(m)$	Observation Probability (HMM)
π	Initial Probability (HMM)
I	Number of input Neuron (MOGA-NN)
O	Number of output Neuron (MOGA-NN)
H	Number of Hidden Neuron (MOGA-NN)
T_o	Ouput Layer Transfer Function (MOGA-NN and ELM)
T_h	Hidden Layer Transfer Function (MOGA-NNand ELM)
C_p	Crossover Probability (MOGA-NN)
M_p	Mutation Probability (MOGA-NN)
MAx_G	Maximum Number of Generation (MOGA-NN)
N_p	Number of Chromosomes (MOGA-NN)
Reg_p	Regularization Parameter (MOGA-NN and ELM)
M_p	Mutation Probability (MOGA-NN)
$L(x_i)$	Lower Bound of Prediction Interval (MOGA-NN)
$U(x_i)$	Upper Bound of Prediction Interval (MOGA-NN)
$\tilde{\text{N}}$	Number of hidden Neurons in ELM
$H\dagger$	Moore-Penrose generalized inverse of H