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## **Abbreviations**

PDF: Probability density function

JIT: Just-in-time

GoS: Grade-of-service

OR: Operations research

IT: Information technology

PSO: Particle swarm optimization

CS: Cuckoo search

BA: Bat algorithm

QN: Quasi-Newton

DS: Direct search

GA: Genetic algorithm

DE: Differential evolution

FA: Firefly algorithm

CTMC: Continuous-time Markov chain

FCFS: First come first served

QBD: Quasi-birth and death

MTTF: Mean-time-to-failure

SOR: Successive over relaxation

MRP: Machine repair problem

BV: Bernoulli vacation

SV: Single vacation

MV: Multiple vacation

WV: Working vacation

MWV: Multiple working vacation

SWV: Single working vacation

VI: Vacation interruption