ShivAI Supply Chain Solutions

PRODUCTION SCHEDULING INTELLIGENCE

Your Shop Floor Runs on Chaos. This Fixes That.

ShivAI Job Shop Multi-Plant Scheduler — AI-powered scheduling that handles the real conditions on your shop floor: machine breakdowns, rush orders, shift changes, tool constraints, and operator availability. Not a static plan. A living schedule.

THE PROBLEM

What Happens Without a Scheduler

₹12–18 Lakhs/yr Lost To idle machines while others are overloaded. Your foreman balances load in his head.	**23% Jobs Delivered Late** Rush orders blow up the entire week's plan. Customers escalate. Penalties pile up.
4–6 Hours/Week Wasted Manually re-planning on whiteboards or Excel when a machine breaks down mid-shift.	**Zero Visibility** No one knows which jobs will be late, which machines are bottlenecks, or what the real cost is.

THE SOLUTION

8 AI Algorithms. 10+ Dynamic Constraints. 1 Click.

Upload your Excel job data. ShivAI runs 8 classic heuristics AND 8 AI optimization methods simultaneously — Genetic Algorithms, Tabu Search, Adaptive Large Neighbourhood Search with reinforcement learning, Q-Learning — and picks the best schedule. Then it handles what happens AFTER the plan.

KEY CAPABILITIES

⚡ **Dynamic Re-Scheduling** Machine breaks at 2pm? JSS scans all jobs — marks completed, identifies in-progress, re-schedules everything pending. Two-pass status detection restarts from any point in time.

🤖 **8 AI Optimization Methods** Differential Evolution · PSO · NEH · Iterated Greedy · Genetic Algorithm (OX) · Tabu Search (N7) · ALNS with destroy operators · Q-Learning RL Agent. All compete. Best wins.

🔧 **Real-World Constraints** Shift patterns (multi-shift, overnight, per-day). Tool/fixture constraints with quantity tracking. Inspector availability. Material arrival delays. Preventive maintenance windows.

🚨 **Urgent Order Preemption** Rush order arrives? JSS pre-empts running jobs — finishes the current batch, yields the machine for the urgent job, then resumes the interrupted job with remaining quantity.

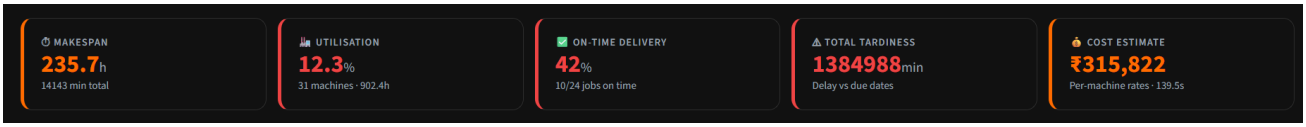
🏭 **Machine Intelligence** Parallel machine groups with flexible assignment. Per-machine efficiency factors, priority ranking, setup time factors. Load balancing or priority-based allocation. Per-machine cost rates (₹/hr).

📊 **Decision Dashboard** KPI cards (makespan, utilization, on-time %, tardiness, cost). Interactive Gantt with critical path. Utilization heatmap. AI vs. heuristic comparison. Excel report export.

HOW IT WORKS

5-Step Wizard — Upload to Results in Minutes

1. Upload	2. Select	3. Configure	4. Conditions	5. Run
Drop **your Master Job Excel file** with Jobs, Machine Config,Shift Definition,and more.	Pick which jobs to schedule. **Filter by** priority, due date, or machine group.	Set schedule start time. Optionally set restart checkpoint for **dynamic rescheduling**.	Define breakdowns, urgent arrivals, material delays, maintenance — **real shop conditions**.	All 16 methods run. **Dashboard** shows **Gantt**, heatmap, comparison, KPIs. Download Excel.

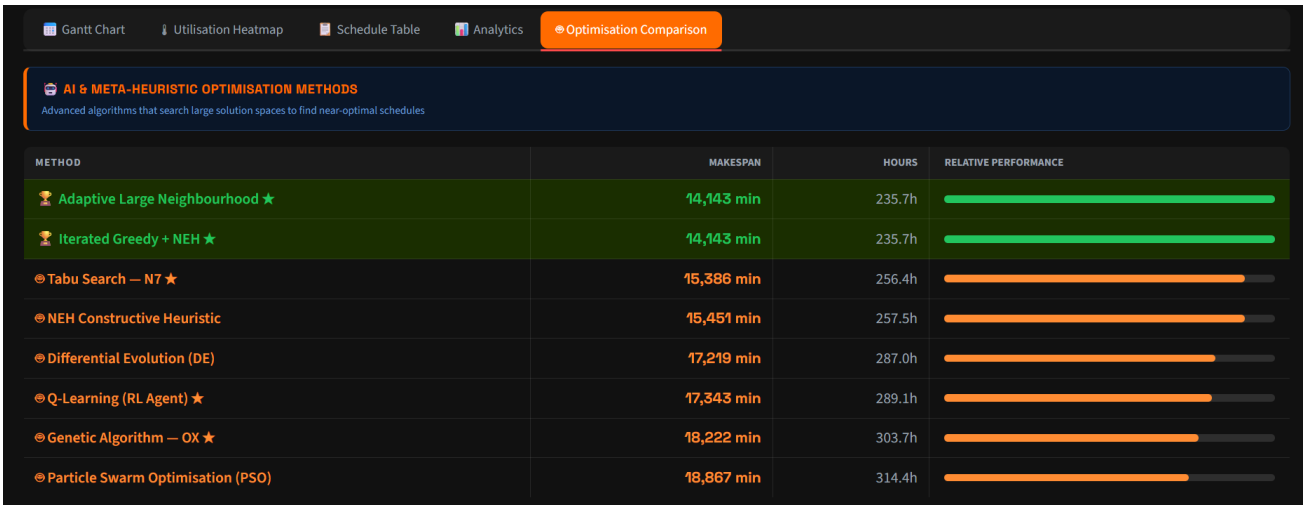


Excel Dashboard Report — Key Performance Indicators

THE AI ENGINE

16 Methods Compete. Best Schedule Wins.

Classic Heuristics (Baseline) + *AI & Meta-Heuristic (Optimisation)*	· Differential Evolution — evolutionary optimization · Particle Swarm — swarm intelligence · NEH — constructive heuristic warm-start · Iterated Greedy + NEH — destroy & rebuild with SA · Genetic Algorithm (OX) — order crossover + mutation · Tabu Search (N7) — neighbourhood search with memory · ALNS — 4 destroy operators with RL-style learning · Q-Learning — reinforcement learning agent



Dashboard Report — Comparison of AI optimisation methods

WHO IT'S FOR

Job Shops
CNC machining, tool & die, precision engineering, print & packaging

Batch Manufacturing
Auto components, metal fabrication, pharma intermediates, plastics

Assembly Operations
Electronics, electrical panels, machinery, consumer durables

Multi-Plant model
Schedule across plants, move jobs between facilities

PRICING

Choose Your Scale - 30-day Pilot included (₹4,999)

Basic	★ Business	Enterprise
₹3,999/mo	**₹7,999/mo**	**₹9,999/mo**
30 jobs · 8 machines AI optimization Shifts + Tools	120 jobs · 25 machines Full dynamic conditions Dashboard + Reports	Unlimited jobs · Unlimited machines Everything + breakdowns Multi-schedule comparison

All plans include: 30-day Pilot · Excel import/export · Hardware-locked license · Desktop model · 17% discount on annual payment

POWER YOUR SCHEDULES WITH SIMPLICITY

Schedule with real-time constraints

Start your 30-day Pilot (₹4,999) | contact@shivaiscsolutions.com | www.shivaiscsolutions.com