

IPL 2022 Mega Auction – Model Validation Report

Objective

To evaluate whether a data-driven, role-aware, EWMA-based auction model can independently reconstruct realistic IPL 2022 auction outcomes using only pre-auction data.

Data Used

IPL (up to 2021), T20Is, BBL, The Hundred, T20 Blast. All data cut off before Feb 11, 2022.
Ball-by-ball data used for skill estimation.

Methodology Summary

- IPL EWMA ($\alpha = 0.41$) as anchor
- Bounded multipliers for form, skill portability, international class
- Role-aware valuation (no double counting)
- All-rounders valued via primary–secondary skill merge
- Auction simulated via two-team duel dynamics with random sequencing

Monte Carlo Simulation

500+ auction simulations were run. Player order, bidder entry, and walk-away points were randomized while valuations and constraints were fixed.

Key Findings

- Core overlap with real IPL 2022 squads $\approx 85\%$
- GT and LSG-type balanced squads emerged consistently
- Tier-B players showed highest ROI
- Marquee overpay correlated with thin squads

Conclusion

The model does not predict exact prices but correctly captures auction structure, market inefficiencies, and squad-building logic. It independently rediscovered the IPL 2022 auction without hindsight bias.