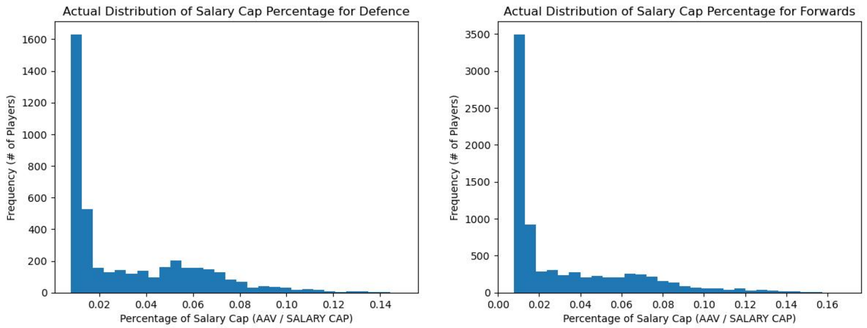
NHL Player Valuation: Determining Value from Performance

Michael Kuby, Sangmun Kim, Yuyang Chen, Haichen Sun

1. MOTIVATION: A RESULTS-BASED BUSINESS

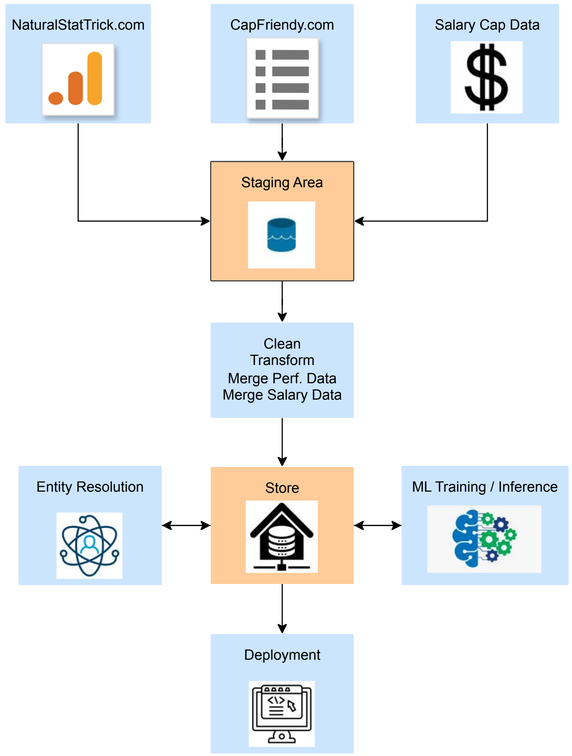
- Standard and advanced metrics track NHL player performance across numerous gameplay states and aspects.
- Actual “cost” to roster a player ranges from ~1% to ~16.5% of the salary cap per year.
- Can we predict a player’s salary based on performance?
- Idea: Prediction ≈ Valuation
- Valuation – Salary identifies over/under performance.



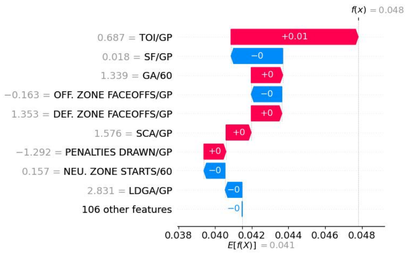
2. METHODOLOGY

1. Data collection from CapFriendly.com & NaturalStatTrick.com
2. Cleaning, Transformation, Mergers
3. Target labels: Player AAV / annual salary cap max
4. Entity resolution: performance metrics <--> salary data
5. Correlational analysis for two different groups of players: Forwards and Defenceman
6. Model Training (LR + Polynomial Features, Tree Models)
7. Recursive Feature Elimination with Cross Val.
8. Inference
9. Product Deployment

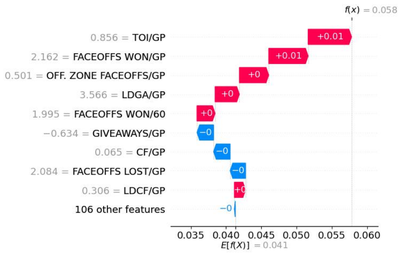
3. DATA PIPELINE



4. MODELS: XGB Regression

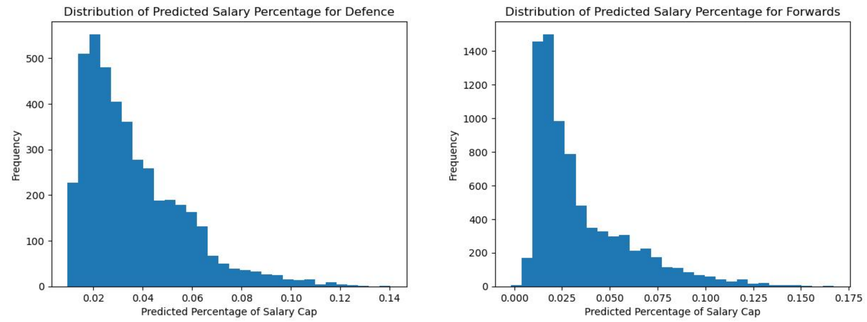


Forwards Model
MSE ≈ 0.000496



Defence Model:
MSE ≈ 0.000525

5. MODEL DISTRIBUTIONS



Players on leashes: Defense (short), Forwards (long)

6. DEPLOYMENT

Features:

- Searchable by Player / Team
- Relationships between variables for a wide range of features, including the model predictions

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