Stock Return Prediction Pipeline

DATA COLLECTION

- Price history

- Volume data

- Fundamentals

- Market indices

FEATURE ENGINEERING

- Technical indicators

- Returns, volatility

- Momentum signals

- Lagged features

MODEL TRAINING

- Train/val/test split

- MLP architecture

- Cross-validation

- Hyperparameter tuning

EVALUATION & BACKTEST

- Out-of-sample test

- Walk-forward analysis

- Risk metrics

- Transaction costs

TRADING SIGNAL

Buy / Hold / Sell
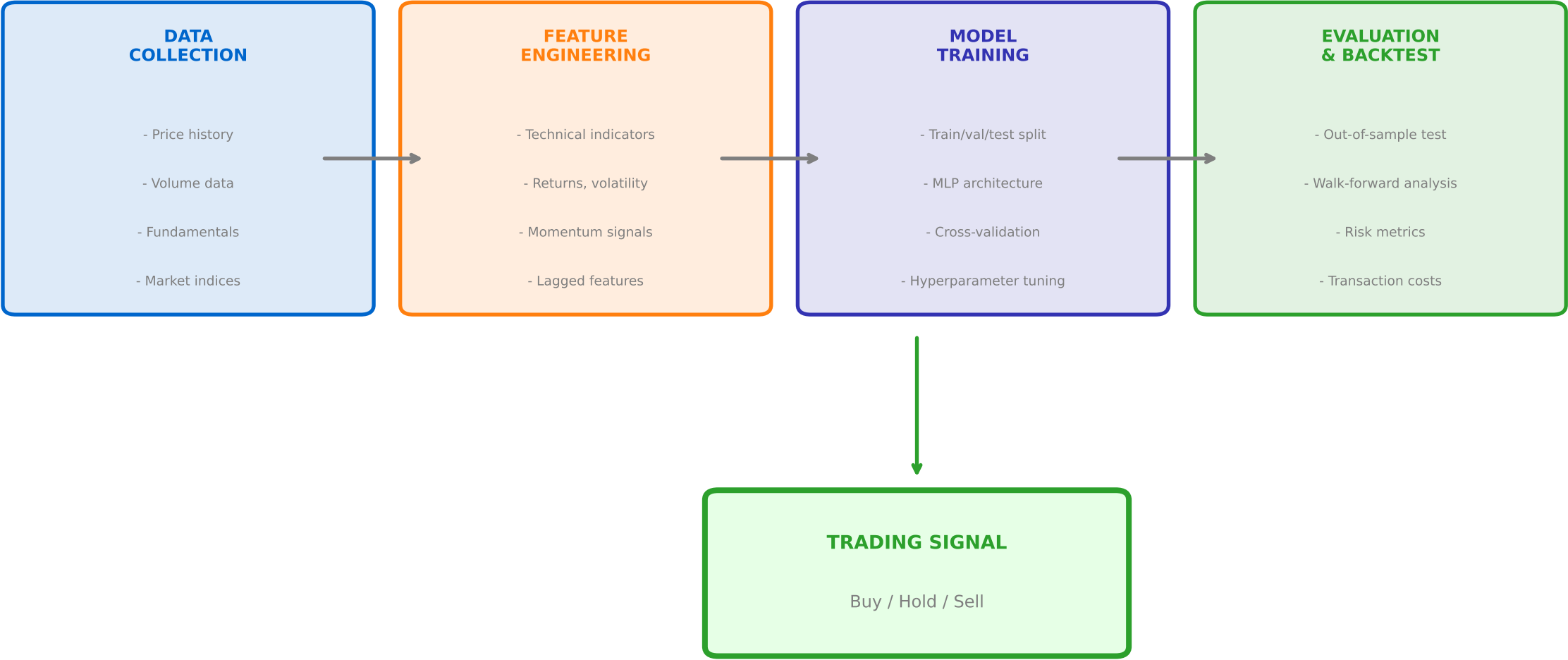
Key Considerations for Finance:
- Markets are non-stationary (patterns change over time)
- Overfitting is extremely common (many try, few succeed)
- Transaction costs erode profits
- Past performance does NOT guarantee future results
- Risk management is as important as prediction