

# Background: What is a Cube?

- The Pokémon Trading Card Game: A game where players assemble decks of cards with Pokémon, Trainer, and Energy cards to battle for victory.
  - Pokémon Cards: The actual Pokémon you battle with which have stats, attacks, and abilities
  - Trainer Cards: Cards representing characters and items that provide additional support and utility
  - Energy Cards: Cards used to power up your Pokémon's attacks
  - Decks: A collection of 60 of the above cards put together

- Cube Draft Environment: A hand picked selection of cards from which players draft decks to battle each other with.
  - Comparison: Fantasy Football
    - Get together with friends to draft
    - Players are cards
    - Teams are Decks
    - Difference: you pick the available players and play the games yourself
  - Designing an experience that requires a careful balance to create a smooth and fun result

### Objective: Design a Balance Analysis Tool

- Problem: Balancing the Cube (Draft Environment) for a fun and Smooth Experience
  - o Is the balance of Pokémon to Trainers correct?
  - o Do I have enough consistency Trainer cards?
  - Do I have enough Pre-Evolution to Support my line-toppers?
  - Do I have cards that will warp the draft around them?
  - What's the average pacing/power level of the cards in my cube?
  - o And many more...
- Solution: Design a Tool for Cube Analysis and Outlier Identification



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Zoroark

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Zorua

7onua

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Other (7)

Absol ex

Sableye

Sableye

Spiritomb

Spiritomb

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Bronzong

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Other i

Dialga

Jirachi

Jirachi

Jirachi

Jirachi-EX

Skarmory e

## Approach

- Data Sources:
  - CubeKoga: Cube Compilation
  - PTCG API: Pokémon Card Information
- Overall Analysis: Create a set of visualizations for understanding card type distributions and Pokémon statistics distributions
- Outlier Identification: Train a linear regression on Pokémon Card statistics to identify cards that have outlier amount of damage.

#### Demo



#### Conclusion

- Objective: Design a Pokémon Cube Draft analysis tool and outlier identifier
- Takeaways:
  - Personal Cube Balance- Consider/Re-evaluate cards like Incineroar, Krokadile, Ursaluna
  - Linear Regression model helped identify simple outliers, but more complex need more complex attribute identification
- Limitations:
  - Better damage/power level calculation including text and context
  - Custom card implementation
- Further Exploration:
  - Supervised Learning Card Classification
  - Unsupervised LLM Classification

# Q&A

#### Extras

- How to play the Pokémon TCG
- Designing Your Own Cube
- Cube Resources
- My Personal Cube
- GitHub