DUNGEONS AND DRAGONS: CHARACTER MULTICLASSING

LOUISA REILLY

CHARACTER CREATION

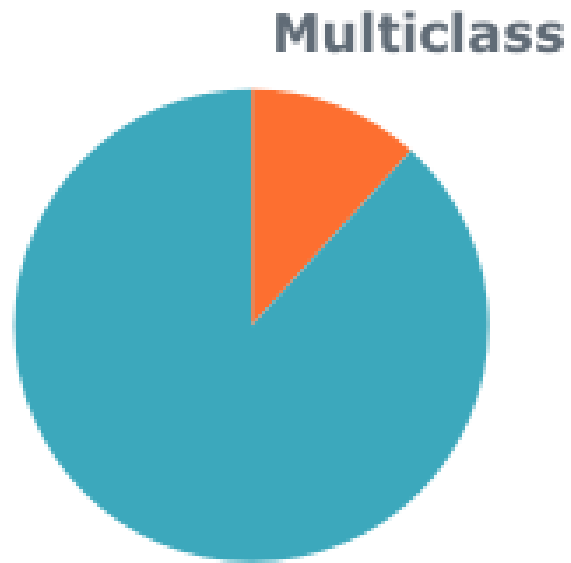Race Class Spells Skills Stats

MULTICLASSING IN DND

Character Class Types

- When leveling up, can choose to "take a level" in a different class to gain different abilities.

- Method of character optimization
  - Not always better

- Complicated

- Novel story ideas

DND CHARACTER SHEET DATASET

- From B. Ogan Mancarci's printSheetApp and interactive Sheet (Online character sheet tools)
  - Features include HP, AC, level, skills, weapons, race, spells, casting, background, casting, class
- Homebrew (non-standard data)
- Free text fields:
  - Spells, Weapons, Alignment
- Selection Bias
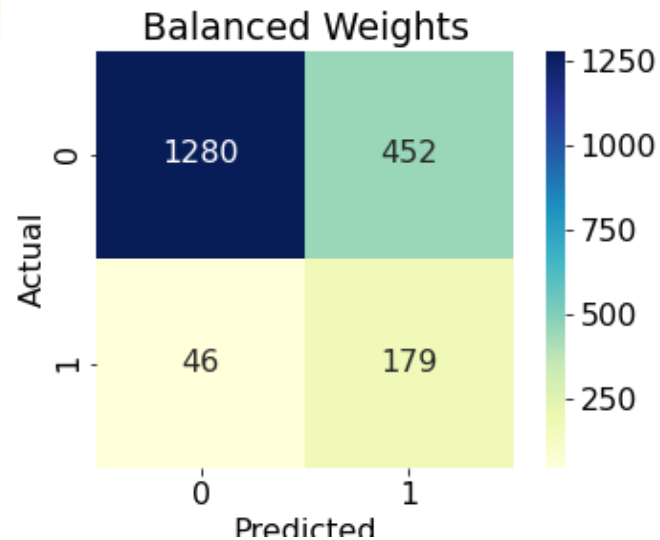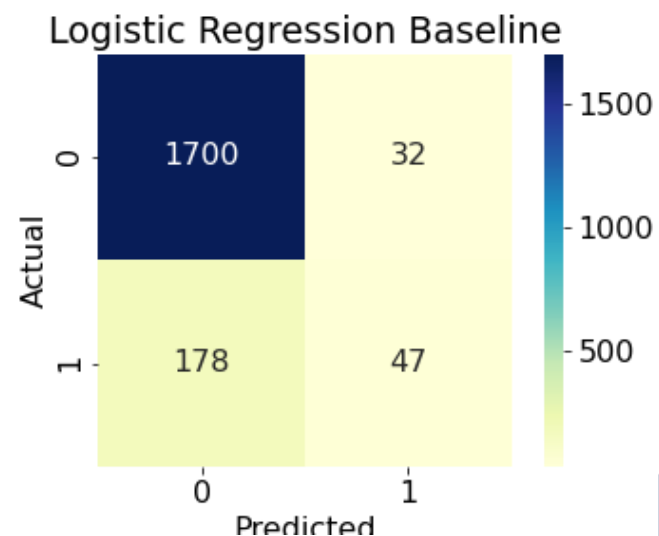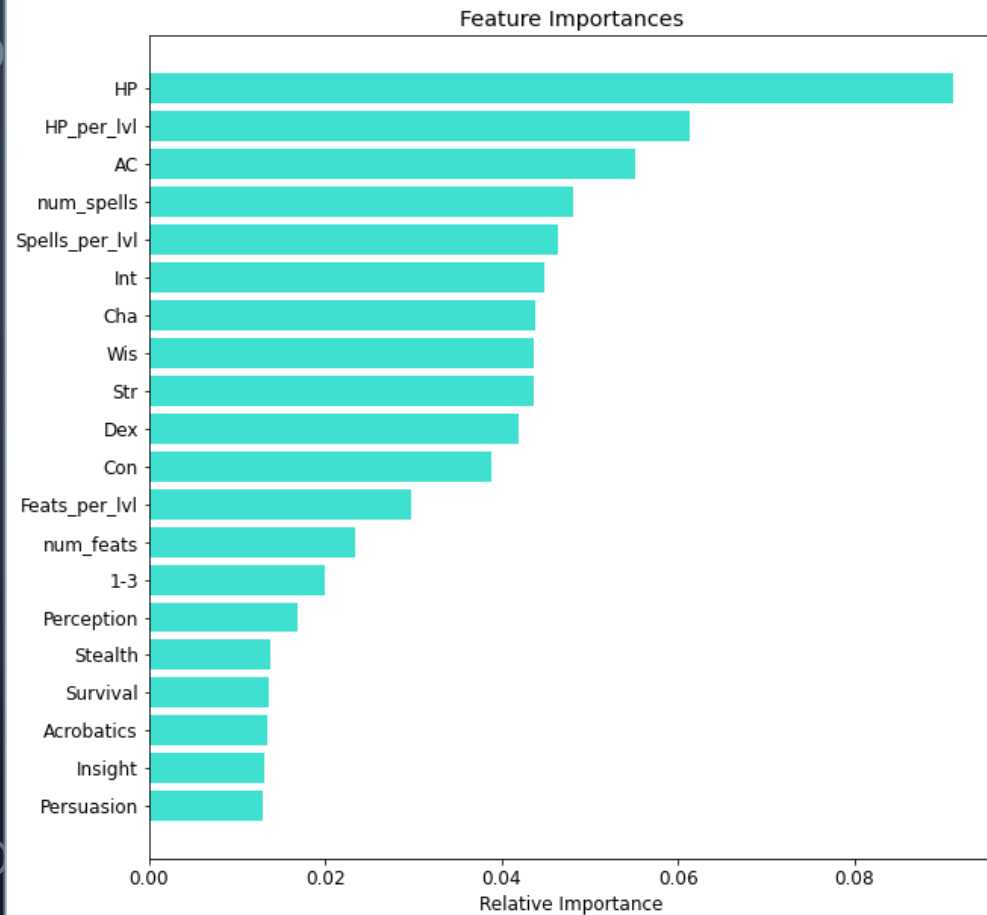
CONFUSION MATRICES

- Severe class imbalance so accuracy is deceiving
  - Baseline: 0.893
  - Balanced Weights: 0.746
- Increase correct + class guess
- Increase in false positives
- Decrease in false negatives

LOGISTIC REGRESSION STATS
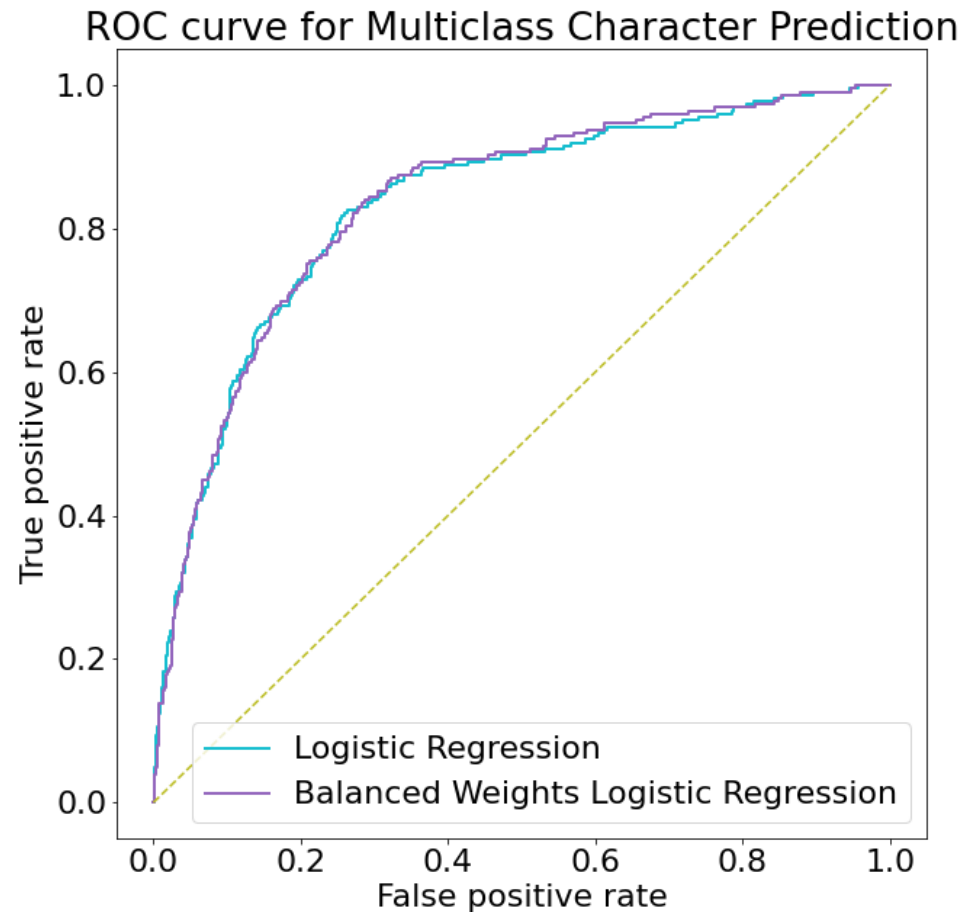
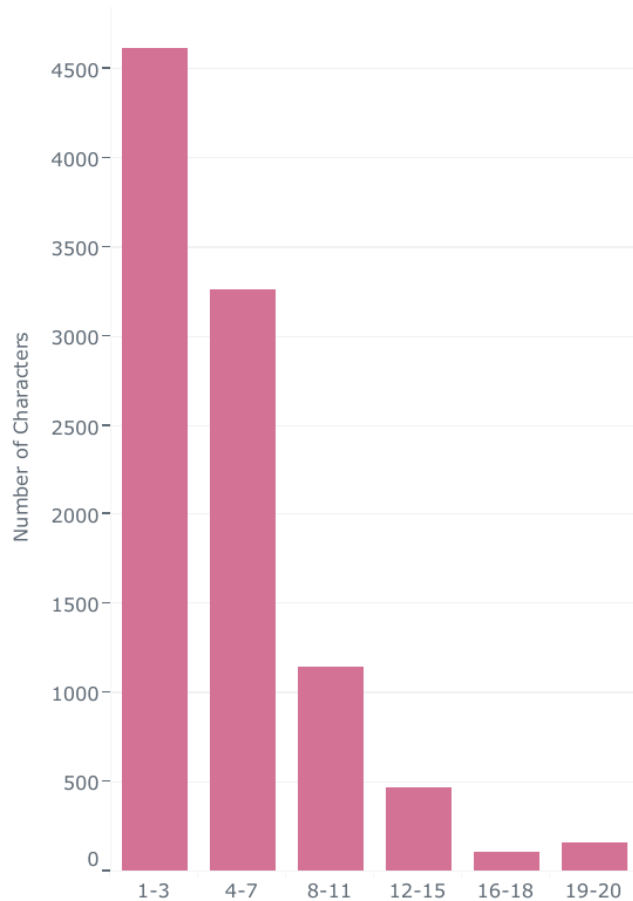| Model	Precision	Recall	F-1 Score	ROC AUC
Baseline	0.595	0.209	0.309	0.595
Balanced Weights	0.284	0.796	0.418	0.767

FEATURE IMPORTANCE

- Engineered features

- Character stats had a large impact

- More engineered features could improve performance.
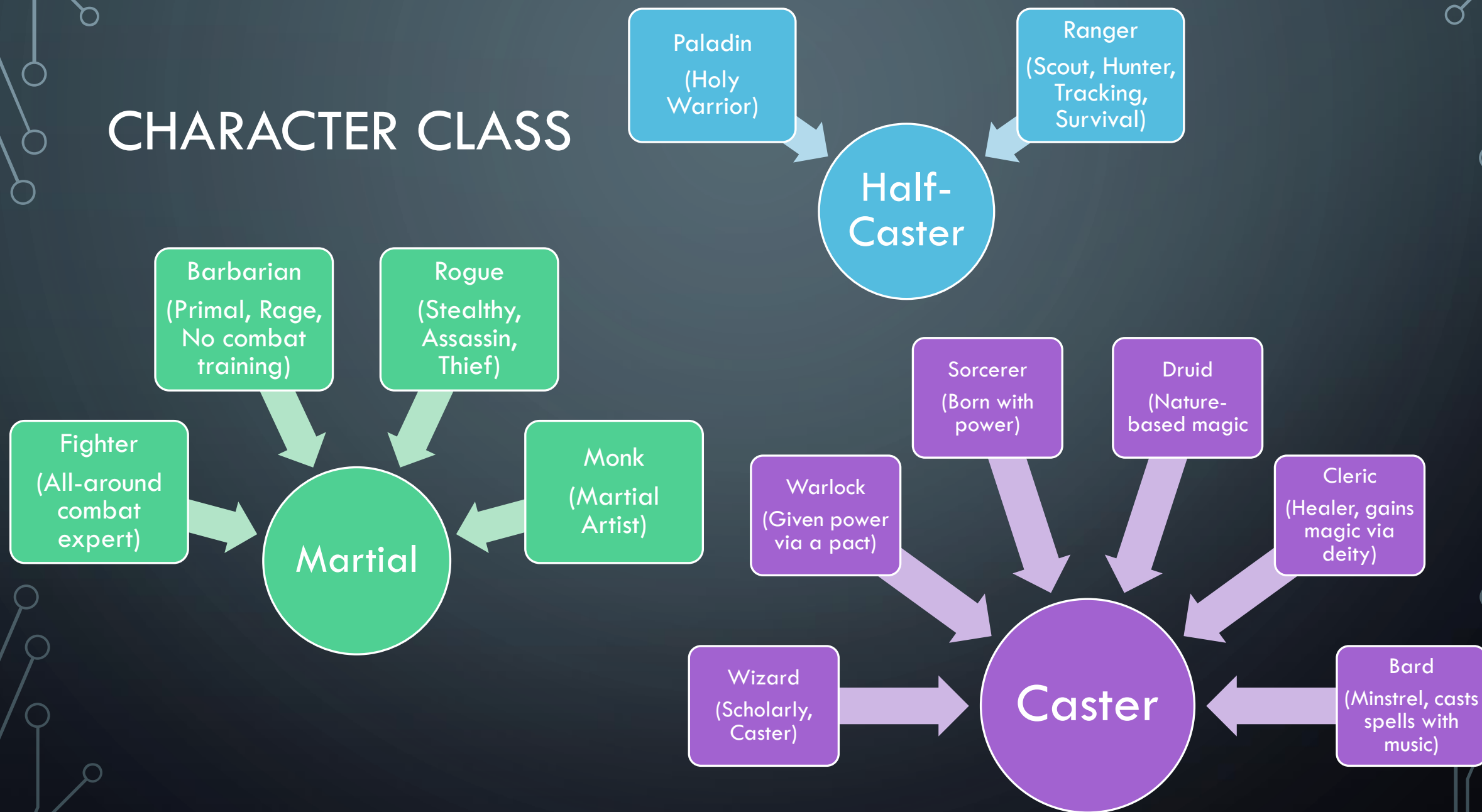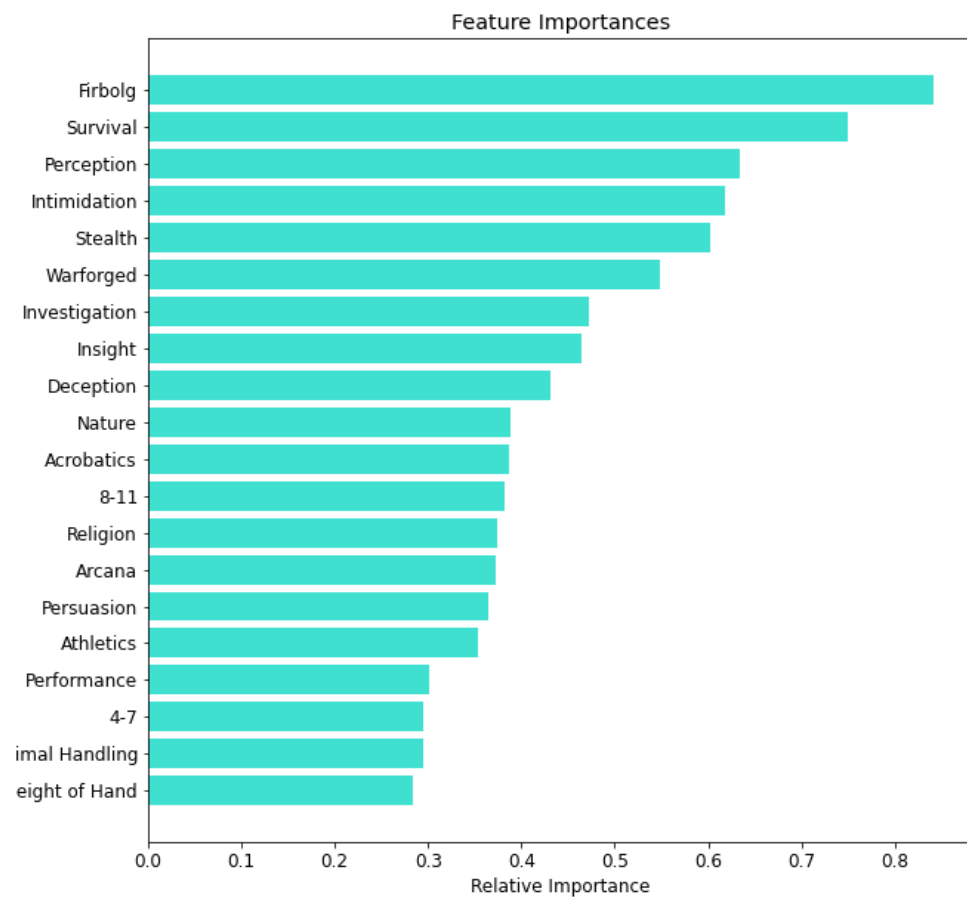
ANY QUESTIONS?

Level Dist for Charcters

FEATURE ENGINEERING

- Normalize to level since data skewed to lower-level characters.
  - HP/level
  - Spells/level
  - Feats/level
- Weapon categories: martial, simple, ranged.
- One-hot encoding skills, race/ other race group, casting stat, level groups
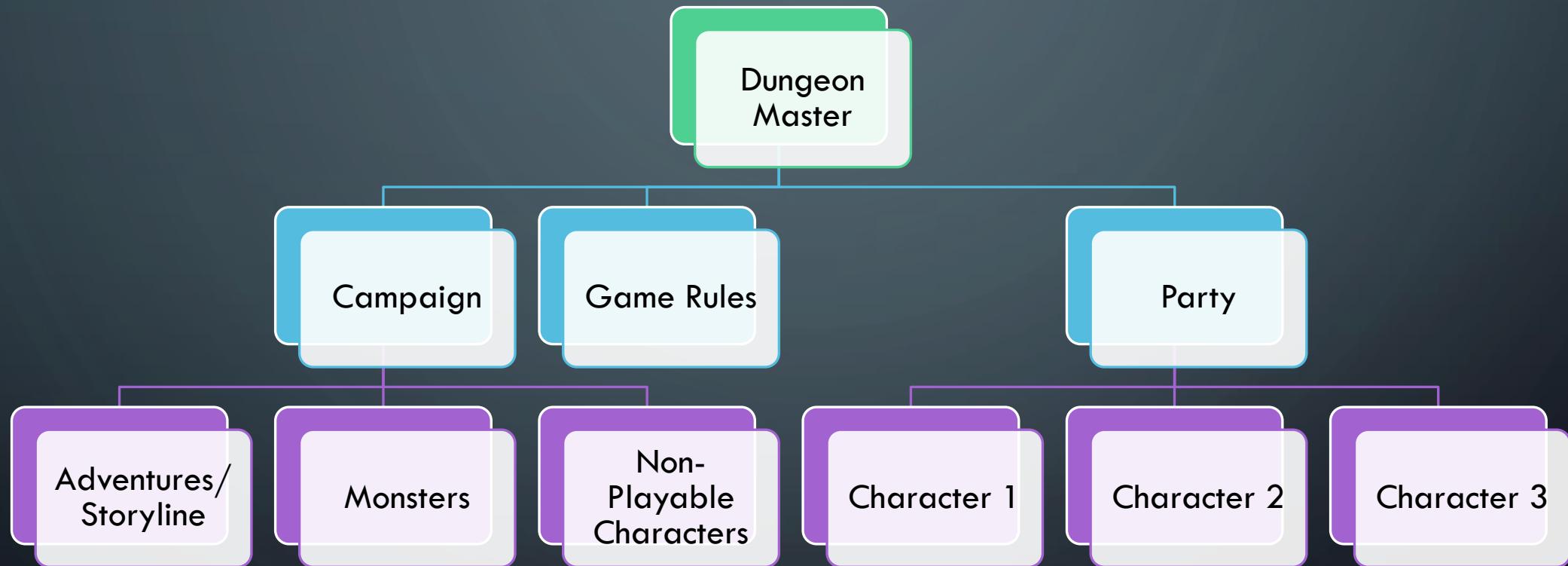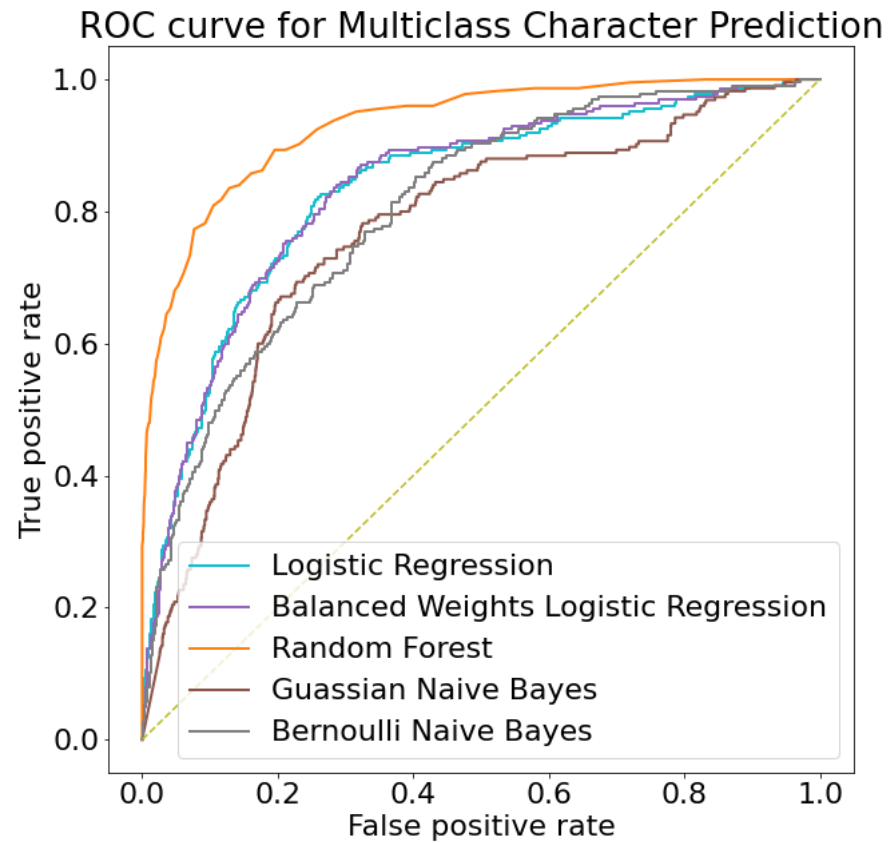
CHARACTER CLASS

Paladin (Holy Warrior)

Ranger (Scout, Hunter, Tracking, Survival)

Half-Caster

Barbarian (Primal, Rage, No combat training)

Rogue (Stealthy, Assassin, Thief)

Fighter (All-around combat expert)

Monk (Martial Artist)

Martial

Sorcerer (Born with power)

Druid (Nature-based magic

Warlock (Given power via a pact)

Cleric (Healer, gains magic via deity)

Wizard (Scholarly, Caster)

Bard (Minstrel, casts spells with music)

Caster

FEATURE IMPORTANCE

DUNGEONS AND DRAGONS (DND) EXPLAINED

ROC CURVE FOR ALL MODELS