The Best Neighborhood in Pittsburgh

Nabeel Raza | Jose Venero

Introduction

Our goal: Find the **best neighborhood in Pittsburgh for families**

Why it matters: Families want safe, stable places with strong schools

We focused on 3 important factors:

- **Safety** – fewer police calls = safer neighborhood
- **School Enrollment** – more students = better school access
- **Vacancy Rate** – fewer empty homes = more stable, lived-in area

We used real data from the **WPRDC** to score and compare neighborhoods

Jose

Metric Explanation

We used three key metrics to define “best” for families:

- **1. Crime Rate**
  - Data: Police Incident Blotter
  - Fewer police-reported incidents = safer neighborhood
- **2. School Enrollment**
  - Data: Pittsburgh Public School Enrollment
  - More students enrolled = stronger school access
  - Indicates family engagement and education resources
- **3. Vacancy Rate**
  - Data: Neighborhood Profiles
  - Fewer vacant homes = more stable and lived-in
  - Lower vacancy suggests long-term residents and better upkeep

Each neighborhood got a score from 0 to 1 for each metric. We averaged them to get a final “bestness” score.

Nabeel

Datasets Explanation

We used 3 public datasets from the WPRDC (Western PA Regional Data Center):

1. Police Incident Blotter

- Records police-reported incidents across Pittsburgh
- Used to measure safety by counting crime reports
- Source

2. School Enrollment by Neighborhood

- Lists public school student enrollment per neighborhood
- Used to measure education access and family presence
- Source

3. Pittsburgh Neighborhood Profiles

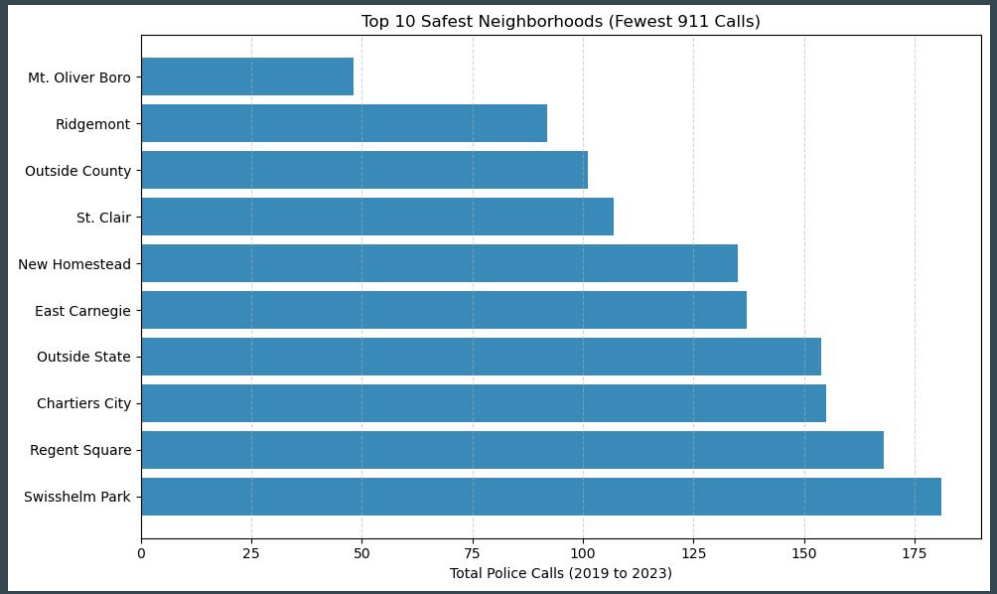
- Provides demographic and housing info by neighborhood
- Used vacancy rate to assess housing stability
- Source

All datasets were cleaned and merged using Python (Pandas + Matplotlib)

Jose

Crime Rate Results

- Based on number of police calls from 2019 to present
- Fewer calls = safer neighborhood = higher score
- Normalized scores between 0 and 1 (crime_score = 1 - (crime_calls - min) / (max - min))
- Top safer neighborhoods had consistently low incident counts

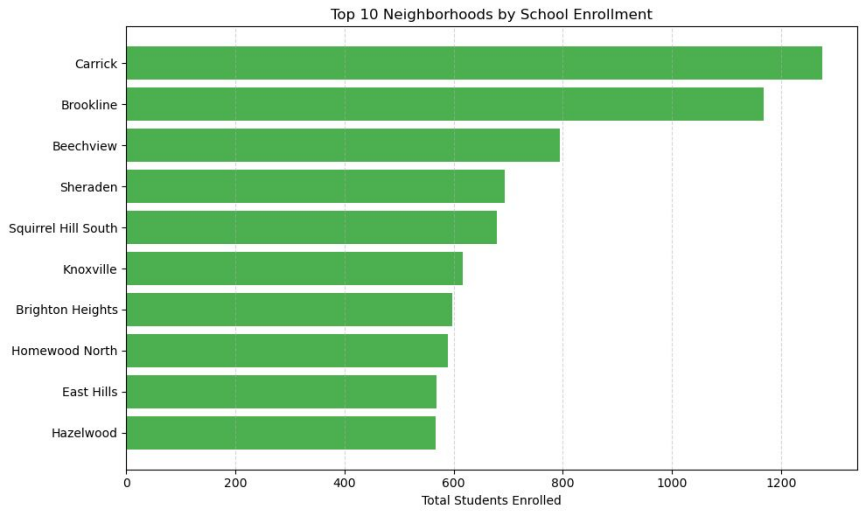


neighborhood	crime_calls	crime_score
Mt. Oliver Boro	48	1.000000
Ridgemont	92	0.994991
Outside County	101	0.993967
St. Clair	107	0.993284
New Homestead	135	0.990097
East Carnegie	137	0.989869
Outside State	154	0.987934
Chartiers City	155	0.987820
Regent Square	168	0.986340
Swisshelm Park	181	0.984861

Nabeel

School Enrollment Results

- Total public school enrollment per neighborhood
- More students = better access to schools and resources
  Normalized scores from 0 (low enrollment) to 1 (high enrollment) (
- *school_score = (enrollment - min) / (max - min)*
- Reflects family presence and education engagement

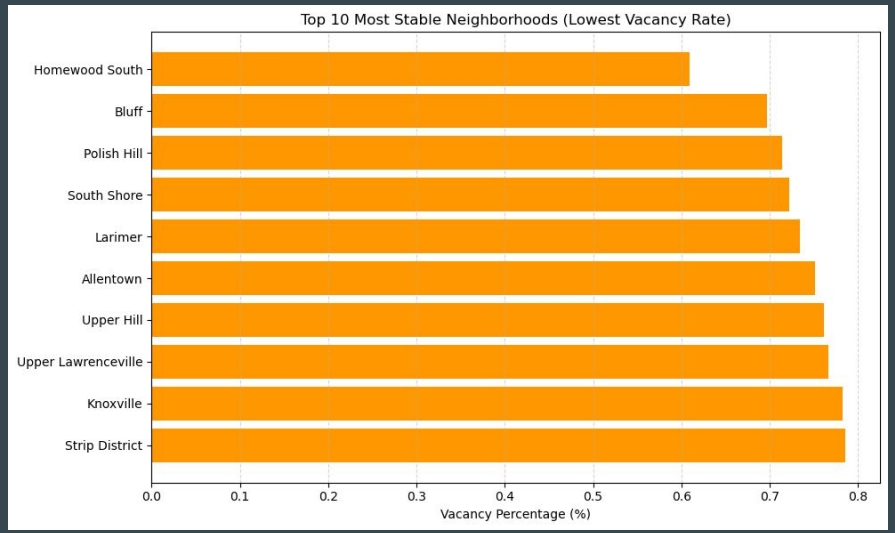


neighborhood	total_students_enrolled	school_score
Carrick	1276.0	1.000000
Brookline	1169.0	0.915348
Beechview	794.0	0.618671
Sheraden	694.0	0.539557
Squirrel Hill South	679.0	0.527690
Knoxville	616.0	0.477848
Brighton Heights	598.0	0.463608
Homewood North	589.0	0.456487
East Hills	569.0	0.440665
Hazelwood	567.0	0.439082

Nabeel

Vacancy Results

- Lower vacancy rate = more stable and lived-in
- Used % of vacant homes from Neighborhood Profiles
- Normalized so lower vacancy = higher score
  Shows long-term community investment
- *lower vacancy = higher score (0 to 1)*

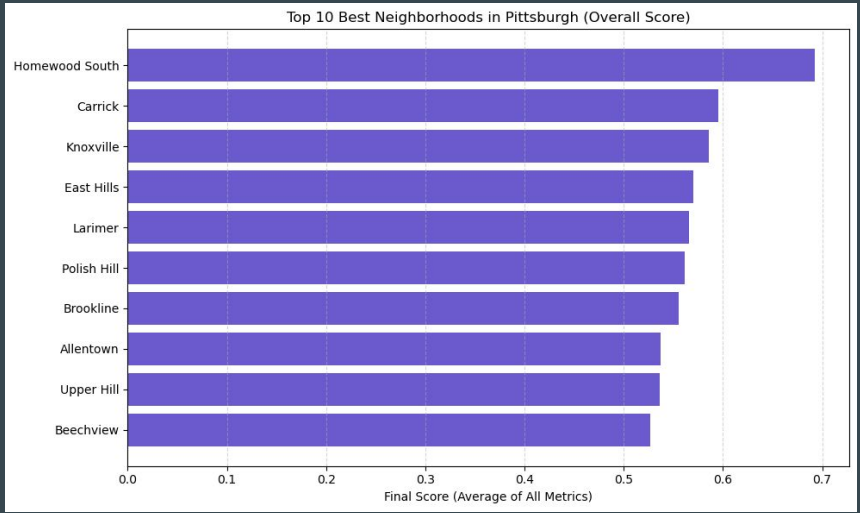


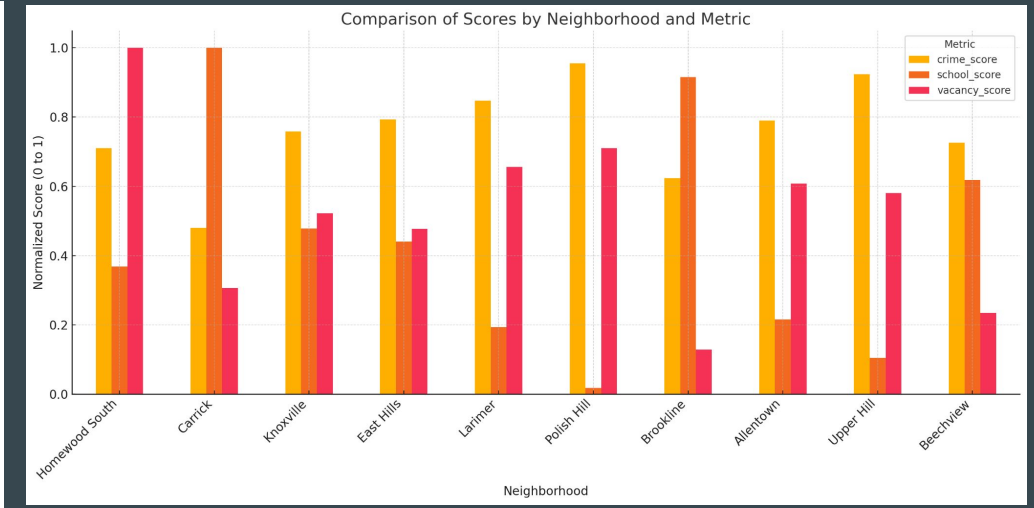
neighborhood	vacancy_percent	vacancy_score
Homewood South	0.609091	1.000000
Bluff	0.696970	0.757686
Polish Hill	0.714120	0.710396
South Shore	0.722222	0.688056
Larimer	0.733990	0.655608
Allentown	0.751356	0.607725
Upper Hill	0.761208	0.580559
Upper Lawrenceville	0.766846	0.565011
Knoxville	0.782535	0.521751
Strip District	0.785714	0.512985

Jose

Final Merged Results

- Combined all 3 scores: safety, school enrollment, and vacancy rate
- Each score was normalized from 0 to 1 and equally weighted
- final_score = (crime_score + school_score + vacancy_score) / 3
- Final score = average of all three
- **Homewood South** ranked #1 for overall balance
- Other strong contenders: **Carrick**, **Knoxville**, **Sheraden**





Code Overview & Explanation (Crime)

1. Data Cleaning:
We used pandas to load and clean our datasets. For example here we clean the neighborhood names

```
crime_recent["INCIDENTNEIGHBORHOOD"] = (
    crime_recent["INCIDENTNEIGHBORHOOD"]
    .astype(str)
    .str.strip()
    .str.title()
)
```

2. Count Police Calls

```
# Step 4: Count police calls by neighborhood
crime_counts = (crime_recent["INCIDENTNEIGHBORHOOD"].value_counts().reset_index())
```

This gave us the total number of incidents reported in each area.

3. Score Each Neighborhood

```
# Normalize the crime calls: lower calls = higher score (0 to 1)
# crime_score = 1 - (crime_calls - min) / (max - min)
crime_counts["crime_score"] = 1 - (
    (crime_counts["crime_calls"] - crime_counts["crime_calls"].min()) /
    (crime_counts["crime_calls"].max() - crime_counts["crime_calls"].min())
)
```

This makes sure the safest areas get the highest scores on a fair scale.

Nabeel

Code Explanation (Vacancy)

1. Calculate Vacancy Rate

```
vacancy_data["vacancy_rate"] = vacancy_data["vacant_housing_units"] / vacancy_data["total_housing_units"]
```

We divided vacant homes by total homes to get the vacancy percentage

2. Convert to a Score

```
# Normalize vacancy rate: lower vacancy = higher score (0 to 1)
# vacancy_score = 1 - (vacancy_percent - min) / (max - min)
vacancy_data["vacancy_score"] = 1 - (
    (vacancy_data["vacancy_percent"] - vacancy_data["vacancy_percent"].min()) /
    (vacancy_data["vacancy_percent"].max() - vacancy_data["vacancy_percent"].min())
)
```

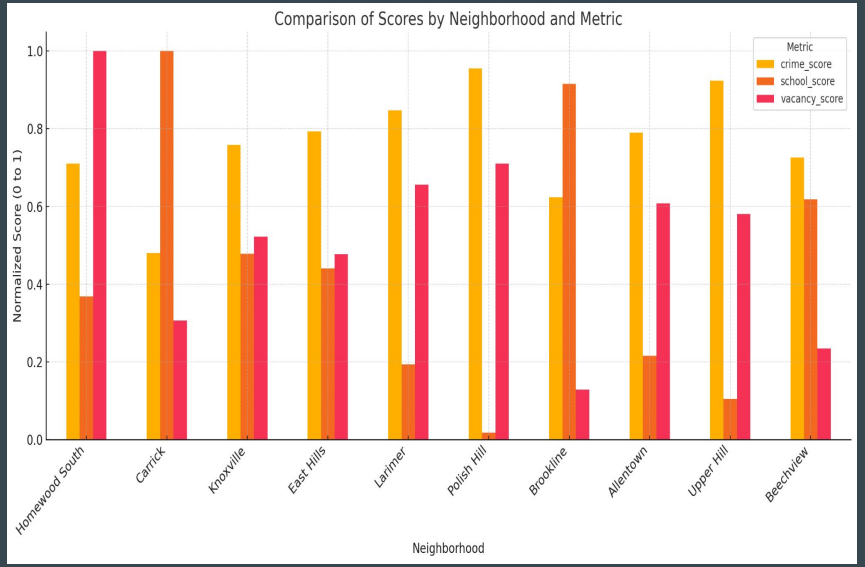
Then we flipped that so that lower vacancy = higher score.

Jose

Conclusion

🏆 Best Neighborhood: Homewood South

- Scored highest overall by balancing all 3 metrics
- Strongest in housing stability (lowest vacancy rate)
- Performed well in crime and school metrics
- Outpaced neighborhoods that only excelled in one category



What We Learned:

- “Best” doesn’t mean perfect in one area, it means balanced across many
- Real data can challenge assumptions and reveal hidden strengths in neighborhoods

Nabeel

Questions?