

# Little City Foundation Practicum Final Presentation

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# From the Last Quarter

## Predictive:

- Feature Engineering
- Predictive Models: Logistic Model, Random Forest Model

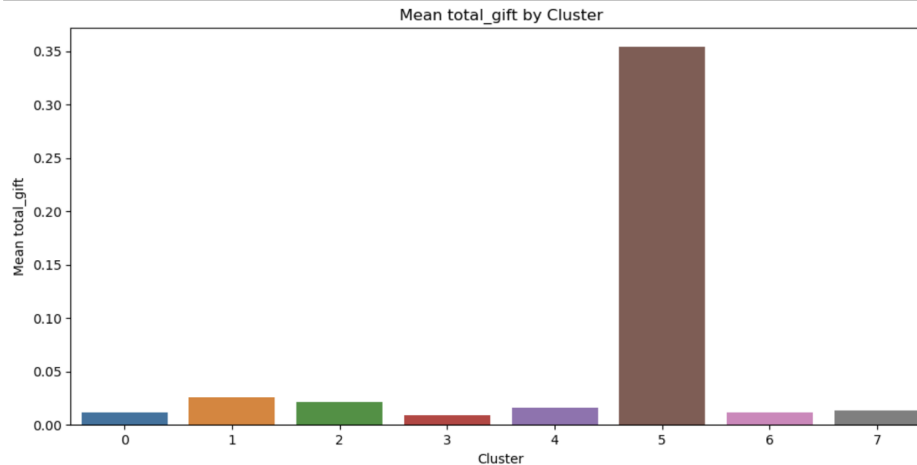
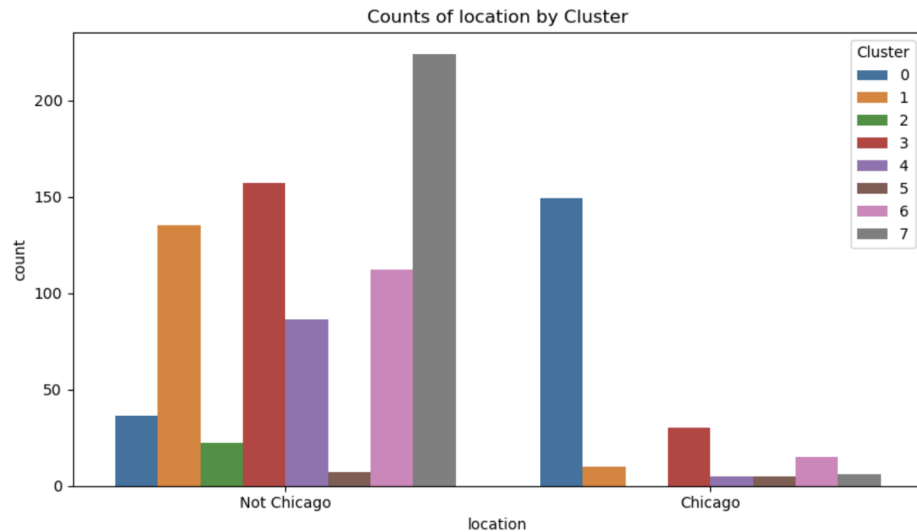
## Prospective:

- Clustering on Donor Segmentation
- Foreign Zip Codes Analysis

# Donor Segmentation

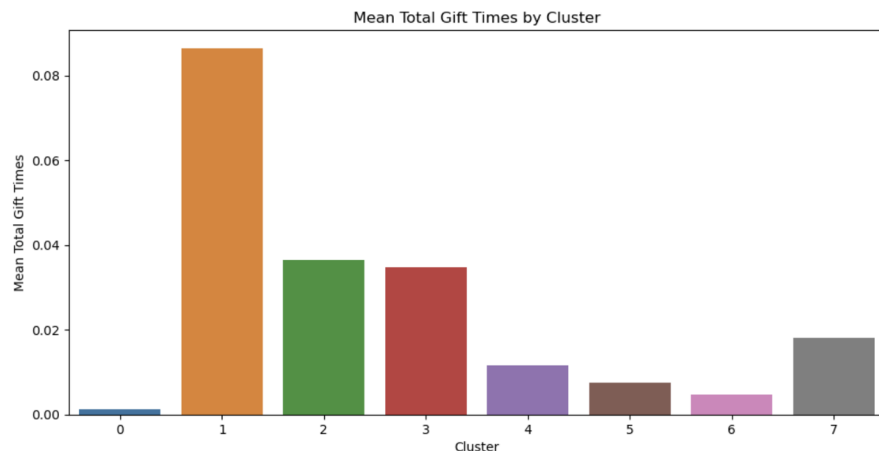
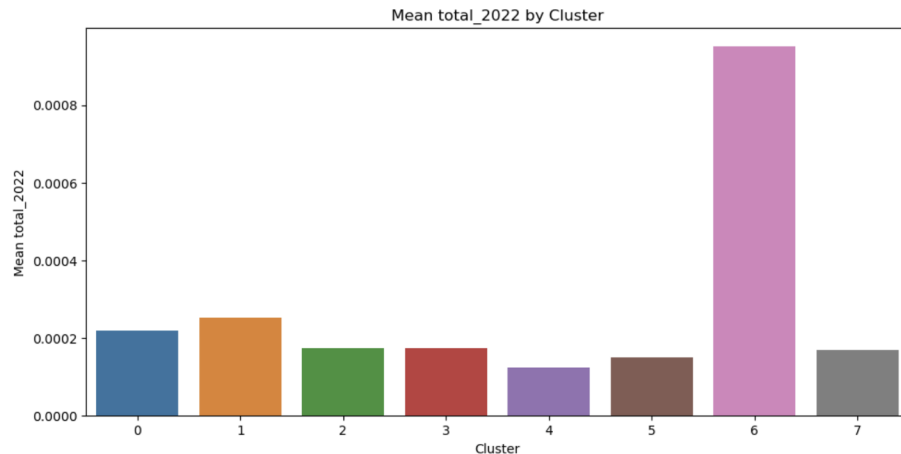
Oliver and Xiyi





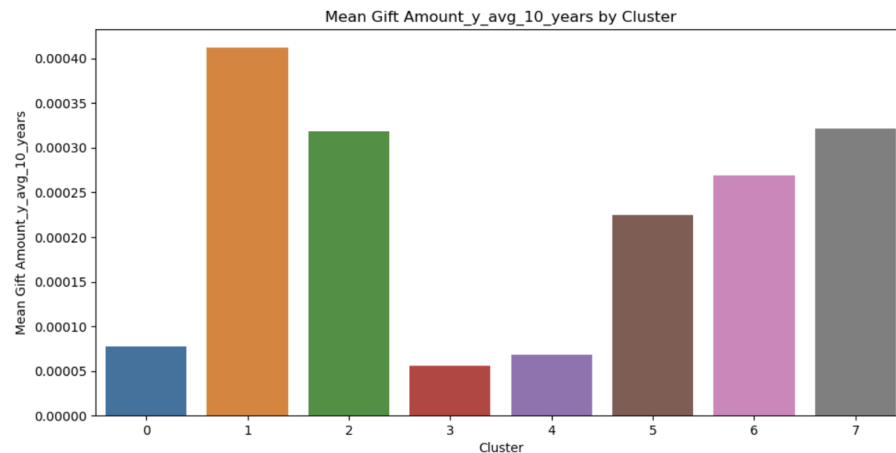
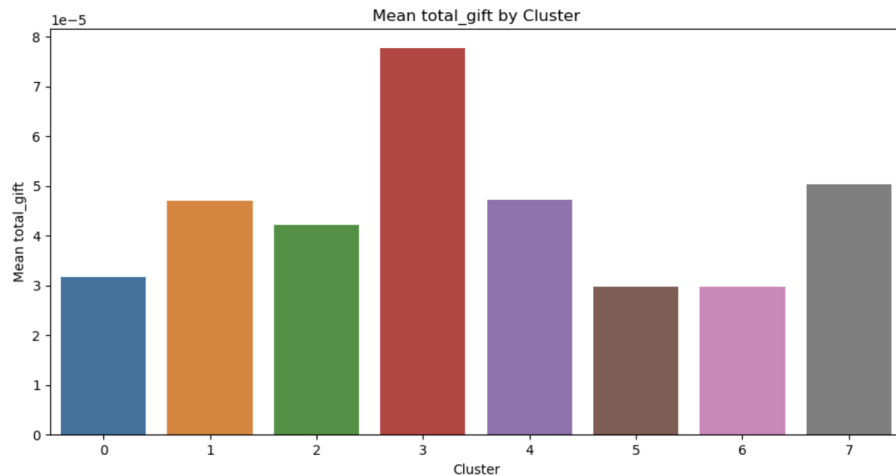
## High donor: total gift > 9999

- Cluster 5 excels across multiple metrics, indicating high donor activity.
- Cluster 7 leads in event diversity.
- Zip code distribution is uniform among high donors.
- Cluster 5, likely the most generous, prefers direct mail events and hails mostly from other US counties.
- Minimal involvement in golf events. (maybe because golf events are not held very often?)



## Mid donor: $1000 < \text{total gift} \leq 9999$

- Cluster 1 excels in various engagement metrics but primarily resides outside Chicago and favors direct mail events.
- There's a noticeable recent trend: increased event attendance but reduced donations.
- Historically, Cluster 1 stands out; recent focus is on Clusters 6 and 0.
  - Cluster 6 leads in 2022 donations.
  - Cluster 0 excels in average gift amounts over the past decade, closely followed by Cluster 6.
- Low participation in golf events.



## Low donor: total gift <= 1000 (for info)

- Cluster 3 excels in various metrics including total gifts, gift frequency, event diversity, and gift amounts but trails Cluster 7 in 2022.
- Cluster 1 surpasses Cluster 3 in average gift amounts over the past decade.
- Cluster 7 leads in total events attended and 2022 donations
- The decline in Cluster 3's activity in 2022 raises questions.
- Most in Cluster 3 live outside Chicago, favoring direct email events, while Clusters 3 and 7 prefer annual giving events.
- Golf events are uncommon among low donors. *Are annual giving events more effective than direct email campaigns in generating donations?*

# Donors Profile

	Location	County	Top 3 Groups (Category)	Top 5 Events
<b>High Donor (Cluster 5)</b>	Not Chicago (within the U.S)	Other US County	Individuals, Parent/Family/Guardian, Government	circle of love, general operating budget, newsletter, holiday mailing, pledge
<b>Mid Donor (Cluster 1-inactive, Cluster6&amp;0-active)</b>	Not Chicago (within the U.S)	(Inactive) Other US County  (Active) Cook County	(Both) Individuals, (Inactive) Parent/Family/Guardian (Active) Business/Corporation	newsletter, general operating budget, circle of love, holiday mailing, pledge
<b>Low Donor (Cluster 3-inactive, Cluster1&amp;7-active)</b>	Not Chicago (within the U.S)	(Inactive) Other US County  (Active) Cook County	(Both) Individuals, Business/Corporation,Staff	general operating budget, newsletter, circle of love, pledge, parent

\*Other US County: counties except Cook, Lake, Dupage, Kane, Mchenry, Rockford, Other Illinois County.

# For High-level Donor

## Takeaway:

A small portion of people (cluster 5) **come to events very often** (compared to other high-level donors) and they **contribute to the majority** of the donation in the high-level donor category. Cluster 5 is representing **Government** agencies. **Maintaining a good relationship with the current donors is important.** Furthermore, LCF can use the impact that has already been built through the massive donation from existing government agencies, to try to expand its influence to other related entities, through referral or more. Pushing the marketing efforts for these donors might be extremely efficient for the revenue growth at LCF.



# For Mid-level Donor

## Takeaway:

For the mid-level donor group, **attending more events does not necessarily imply a higher amount of donation**. Gifting frequency is also not indicative of the overall donation, which somehow challenged our previous belief. In other words, people who barely come to any events can donate as much as active event participants. Also, the cluster centroids of 1 (inactive) and 0 (active) are the exact same when analyzing the categorical variables, which means that there is a **huge variation** when **deciding** how much to donate in the mid-level donors.

## Proposed experiments:

Follow some of the mid-level donors' future attendance at the events. Record their donations (if any). Classify them into higher-level donors versus lower-level donors (based on their overall donation in a period or other metrics if applicable). Every time they left the event, send out questionnaires to collect the reason why they donated/did not donate. Analyze the difference between donors between these two classes to understand what are the **decisions** based on.

# Summary

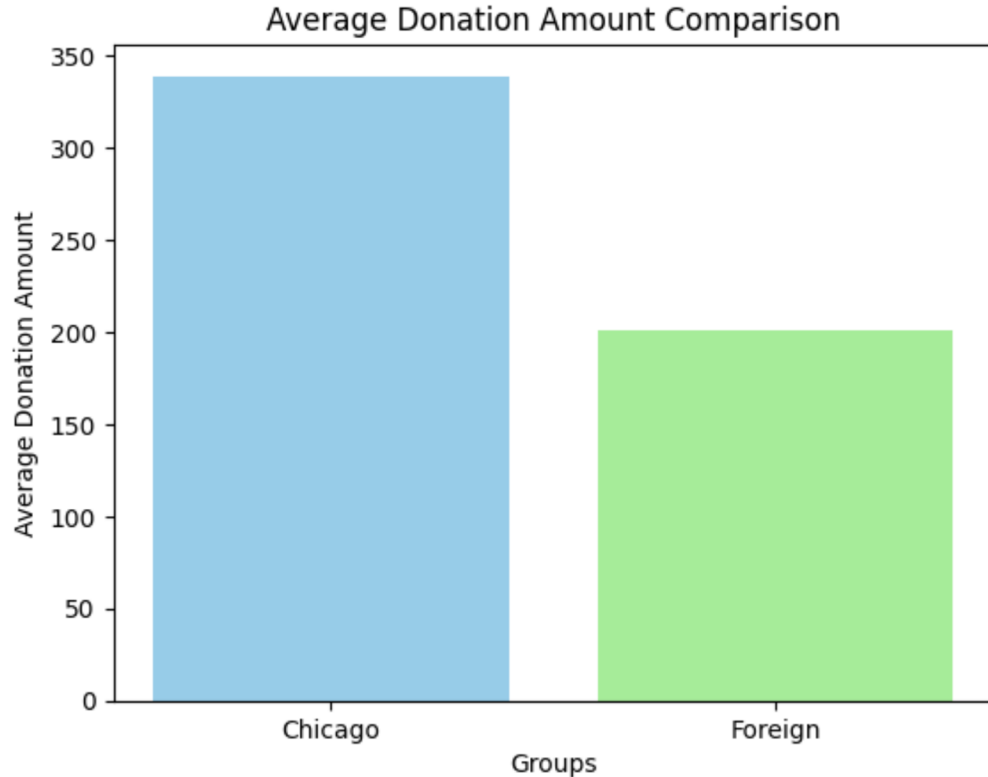
- Personalize events recommendations.
- Create a survey team that keeps track of the donating behaviors of a small but informative sample group over a relatively long period.
- Target donors efficiently. It is hard to increase the donation or simply keep all donors around for a long time. Better allocate resources to specific targets.
- People within the same donation level can also vary. Studying the difference can be impactful.
- One of a few certain conclusions that can be made is: that geographical background **DOES NOT** play an important role at LCF. Not sure how or what makes Other US County donors active, but good work in that section! The local marketing team can also extract insights - does a cooler website make people want to donate? etc.
- There are some recent shifts shown in both mid and low-level donation records. Finding reasons behind this can be very important for future growth and stability.

# Donor EDA

Elsie and Cailey



## Average Donation Amount for Location = 'Chicago' or Foreign = 'Yes'



- Average Donation Amount for location = 'Chicago': 338.74
- Average Donation Amount for Foreign = 'Yes': 200.80

## Average Donation Amount for Non Chicago and other US zip codes

Number of donations for each unique foreign zip code:

NN12 8NB	10	UK
L8W 1B3	3	
V8N 6L1	2	
TN25 5PF	2	
K7L 5J7	2	
W1H 7JT	1	
TWI 2AZ	1	
L6Y0N8	1	
EN10 7TG	1	
L4C 5L6	1	
N1S2E7	1	
L4J-7C9	1	
V2N 5L5	1	
P6C1X7	1	
M3C 1T9	1	
M5P 3L6	1	
L7M 2T1	1	
H1G 3J5	1	

- Average Donation Amount for Cook, McHenry, Dupage, Rockford: \$206.81
- Average Donation Amount for all U.S excluding IL: \$226.69
- Average Donation for Other Illinois: \$208.43

18 unique zip codes

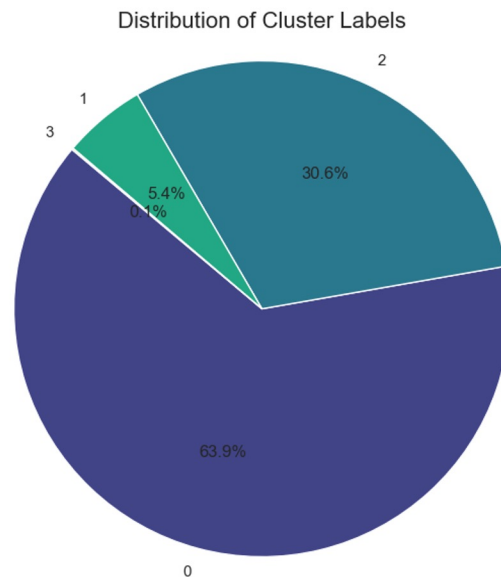
# High Donor Behaviors

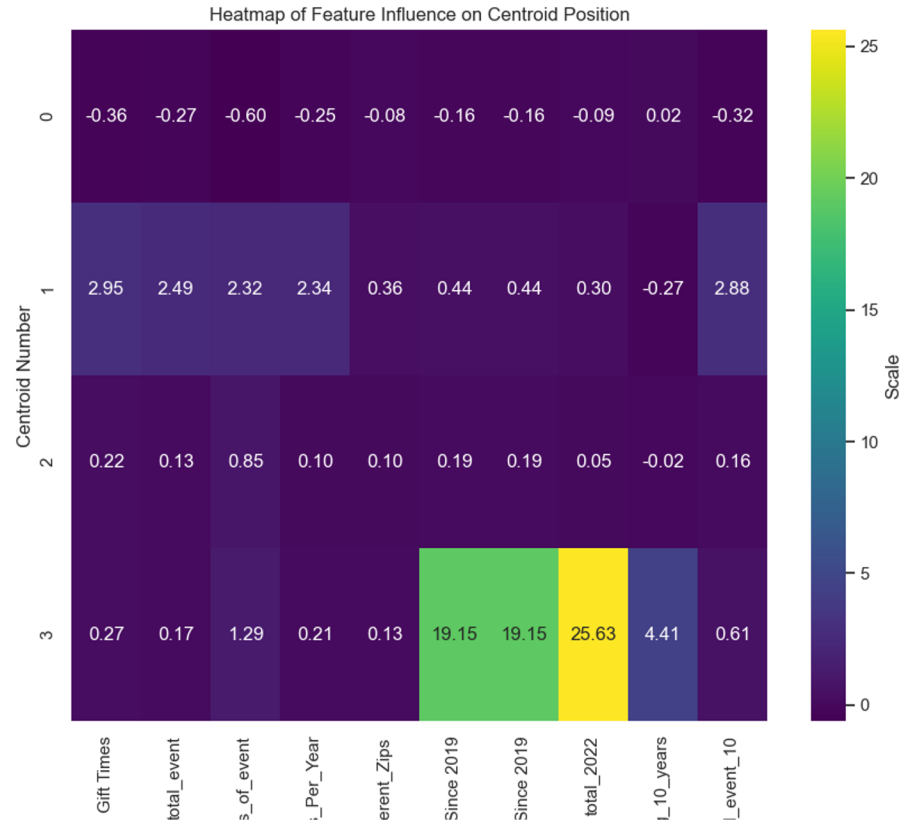
Judy, Elsie, and Cailey

# Groups of High Donors

We see 4 distinguishable groups:

- Group 0: 638 donors
- Group 1: 54 donors
- Group 2: 306 donors
- Group 3: 1 donor





Feature

- Total Gift Times
- total\_event
- types\_of\_event
- Avg\_Events\_Per\_Year
- Num\_Different\_Zips
- Max Gift Amount Since 2019
- Min Gift Amount Since 2019
- total\_2022
- Gift Amount\_y\_avg\_10\_years
- total\_event\_10



## Group 0 - the Majority

- The majority: 64% of the high donor population.
- Represents a cluster of donors who, on average, donate and participate less frequently than other clusters (most features are negative, indicating below-average engagement).

## Group 1 - the dedicated donors

- 5.4% of high donor population.
- These donors are **highly active and generous**, with high values in total gifts, events attended, types of events, and average events per year. They have significantly higher maximum donation amounts.

## Group 2 - the moderately active donors

- 30.6% of high donor population.
- Represents a moderately active and generous group of donors, with positive but not extreme values across most features.

## Group 3 - Best Donors

- Going to events frequently
- Donating frequently, recently in the last ten years.
- Particularly noticeable in "Max Gift Amount Since 2019" and "Min Gift Amount Since 2019" where values are extremely high,
- Aim: Maintain connection.

# Donor Recommendation

## Group 0:

- Conduct surveys or focus groups to understand their motivations
- Develop targeted communication strategies to keep them informed
- Offer entry-level engagement opportunities
- Implement a loyalty program to recognize and reward their support

## Group 1:

- Encourage increased event attendance
- Diversify the types of events they are invited to
- Aim to deepen engagement and potentially increase giving levels

## Group 2:

- Identify programs or initiatives that align with their interests
- Offer targeted giving opportunities to encourage increased donations
- Focus on moving them up the donor pyramid over time

## Group 3:

- Provide personalized attention through dedicated relationship managers
- Host exclusive events tailored to their interests
- Share targeted communications highlighting their impact
- Cultivate potential major gifts through one-on-one engagement
- Encourage peer-to-peer fundraising to leverage their networks

# Demo Time



# Thank you for everything!!

We will provide you with:

- This presentation
- A write up of how to bring in new data each year into the model
- Code (if you want it!)
- Is there anything else you need from us?