# Predicting Fine Collection Outcomes for Low-Level Civil Tickets in New York City

Allison Gao
October 2021



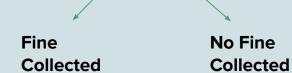
#### **SUMMONS TO APPEAR** FOR CIVIL PENALTIES ONLY SUMMONS NUMBER: 0000 000 000 ENFORCEMENT AGENCY: Police Department

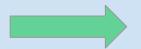
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Respondent Last Na	me	First	Ang	ala		M.I.
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Phone No			Cell Home	D.O.B. MM/DE	O/YY	Sex □ Male □ Female
Mailing Address						
3029 AVEN	UE S BRO	OKLYN	11235	NEW Y	ORK	
ID Number		ľ	D Type			
Race White Black	∷ ☐ Hisp. White ☐				□Asian/P	acific. Is.
06/25/20	04		Time of O	ccurrence		AN X PN
Place of Occurrence	( At In Fro	ont Of Op	posite)	<b>U</b>	Precir	ict
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Hearing Locatio	n: Office of	Administra	ative Tria	als and H	learings	(OATH
Borough: Bro	ooklyn		(See back	for address)		628-4692 yc.gov/oat
Admin. Code  Rules of City of NY	☐ Parks Rule ☐ Traffic Rule	es: 56 RCNY es: 34 RCNY		Other		
Section/Rule A	.C. 20-453				OATH C	ode I
	250	Max. Pena	Ity		Property Removed	□ Yes
Details of Charge(s):	UNLI GENE	ctual Alleg	ations	NDO	R	Ç
NYC Charter Section 1048 and 1049-a T, an employee of the agency named a existence of the violation through a rev Department. False statements made h	above, affirm under penalty iew of Departmental record	of perjury that: 1) I pers s; or 3) I was informed	onally observed of the commission	the commission of the of the violation by a	e violation charg reliable witness	ed: 2) I verified th
I/O Signature	aren are punishable às à C	iase A Misderneanor pu	esuant to Section	210.45 of the Penal I		nmand
Rank/Title	Name				Tax	No.



0000 000 000

#### **Classification Model**





Stakeholders:

The City of New York

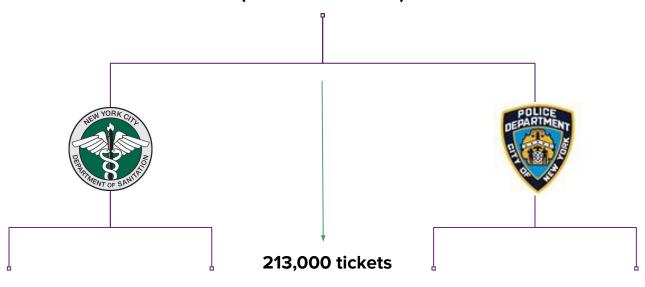
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**Elected Public Officials** 

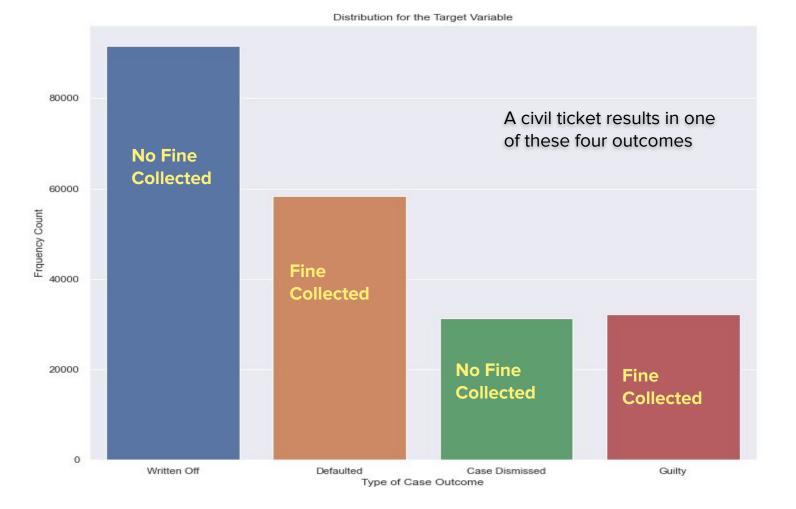


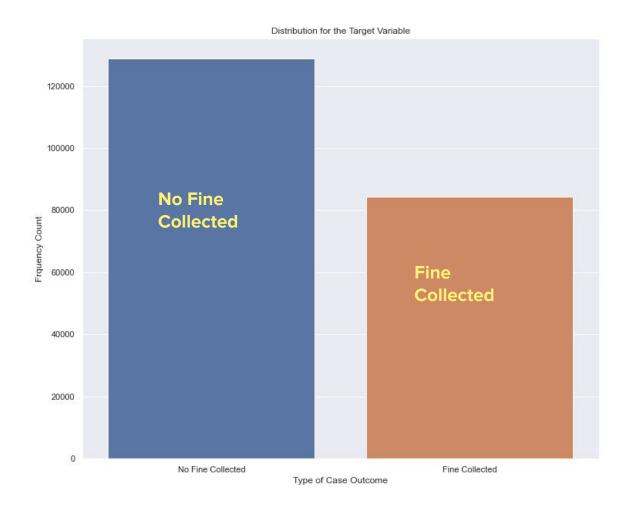
## Office of Administrative Trials and Hearings Case Status Tracker

(17.9 million tickets)



Ticket Ticket Ticket Ticket





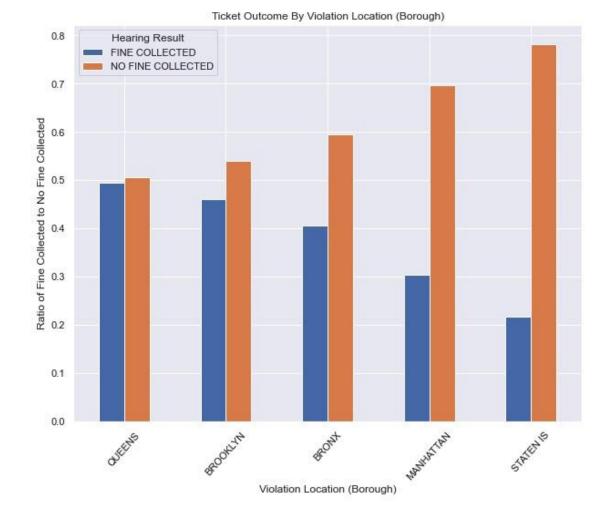


**Violation Location** 

#### **SUMMONS TO APPEAR** FOR CIVIL PENALTIES ONLY SUMMONS NUMBER: 0000 000 000

ENI	FORCEMENT	AGENCY:	Police	Departme	nt	
Respondent Last Na	me	First	Ang	ela		M.I.
Phone No			Cell Home	D.O.B. MM/DI	D/YY G	ex Male Female
Mailing Address 3029 AVEN	UE S BRO	OKLYN	11235	NEW Y	ORK	
ID Number			D Type			
Race White Black	Hisp. White □	Hisp. Black □	Am. Ind./A	laskan Native	□ Asian/Pac	ific. Is.
06/25/20	04		Time of C	occurrence ()		AM X PM
527 KINGS HI				W YORK	Precinc	
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WARNING: If you do may owe larger pen- ability to keep or get legal action against y	alties. If you do a City license, p	not pay any permit or reg	/ imposed istration.	d penalties, The City mi	esponsible you may k ght also tak	and you ose your e further
Hearing Location	n: Office of	Administra	ative Tri	als and H	learings (	(OATH
Borougii.	ooklyn		(See back	for address)	(844) 6: www.nyc.	28-4692 .gov/oath
Admin. Code  Rules of City of NY	☐ Parks Rule ☐ Traffic Rule			Other		
Section/Pule	.C. 20-453				OATH Cod	de
Mail-in Penalty \$	250	Max. Pena	lty		Property Removed	☐ Yes ☐ No
Details of Charge(s):	TINIT T					
	UNLIC	LENS	ED			SA
		ctual Alleg	ations	MD A	ъ	Ξ
	GENE.	KAL	VE	NDO	K	
NYC Charter Section 1048 and 1049-a I, an employee of the agency named a existence of the violation through a rev Department. False statements made in	above, affirm under penalty of few of Departmental records	of perjury that: 1) I per or 3) I was informed	sonally observed of the commission	the commission of the of the violation by a	ne violation charged; a reliable witness that	2) I verified the
I/O Signature	отопт што риппонавле as a Ca	ees rs mission marker pi	a wall it to occur	2.040 Or the Penal	Comn	nand
Rank/Title	Name				Tax No	0.





## **Issuing Agency**

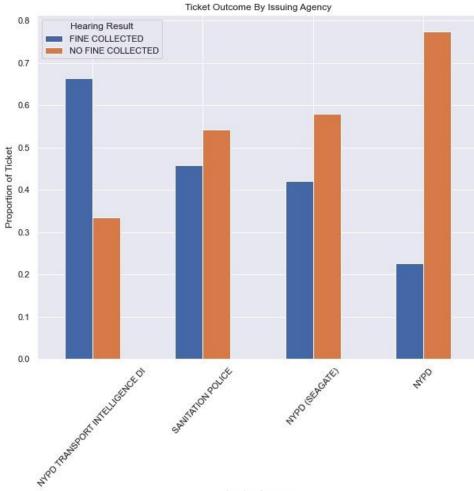




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Respondent Last Na	me	Fire	Ang	ela		M.I. 
Phone No			□ Cell □ Home	D.O.B. MM/DE	O/YY	ex Male Female
Mailing Address 3029 AVEN	UE S BRO	OKLYN	N 11235	NEW Y	ORK	
ID Number			ID Type			
Race White Black	☐ Hisp. White ☐	Hisp. Black	□Am. Ind./A	laskan Native	□Asian/Pa	cific. Is.
06/25/20	<del>04</del>		Time of C	Courrence		AM X PM
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527 KINGS HI	GHWAY BRO	OOKLYN	11223 NE	W YORK		
Include	the summon	s number	above on	all comm	unication	s
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Hearing Location		Administ	rative Tri	als and H	0	,
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Admin. Code Rules of City of NY	☐ Parks Rule ☐ Traffic Rule			Other		
	.C. 20-453				OATH Co	de 
	250	Max. Pen	alty		Property Removed	☐ Yes ☐ No
	UNLIC GENE	ctual Alle	gations	NDO	R	
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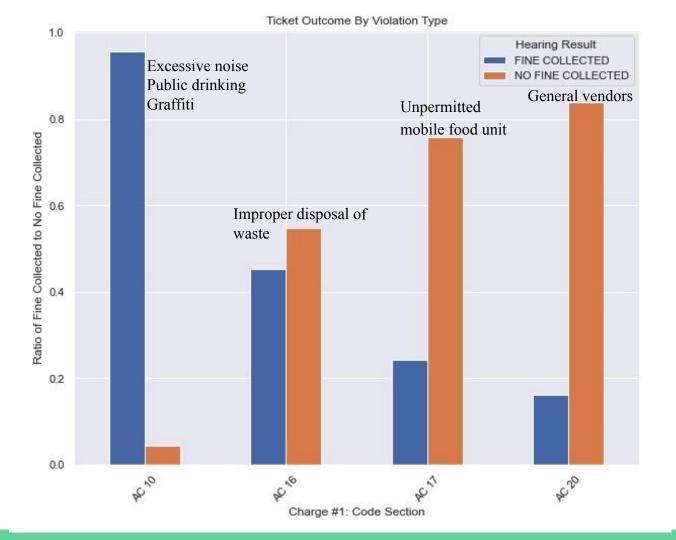


**Violation Type** 

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	FORCEMENT AGEN	ICY: Police	Departme	ent	
Respondent Last Na	me	First Ang	rela		M.I.
Phone No	1	Cell Home	D.O.B. MM/D		ex Male Female
Mailing Address				, 10	remale
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ID Number		ID Type			
Race White Black	∷ Hisp. White ☐ Hisp. Bl	ack  Am. Ind./	Alaskan Nativ	e □Asian/Pac	ific. Is.
06/25/20	04	Time of	Occurrence		AM X PM
Place of Occurrence	(□ At □ In Front Of	□ Opposite)		Precinc	t
527 KINGS HI	GHWAY BROOKLY	YN 11223 NI	EW YORK		
Include	the summons num	ber above o	n all comm	unications	3
HEARING DA	ATE: <u>09/20/</u>	2004_	AT: _H	H:MM	□ AM
See the BACK	ou must respond OF THIS SUMMO	d by the a DNS to lea	pove da irn about	te. : vour op	tions
legal action against y	not respond, you may alties. If you do not pe a City license, permit o you. See the back for n	nore information	on.	ght also tak	e furthe
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_	on: Office of Admir Ooklyn		k for address)	(844) 6	(OATH <b>28-4692</b>
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Borough: Bro	Ooklyn  □ Parks Rules: 56 RG □ Traffic Rules: 34 RG .C. 20-453	(See bac	ck for address)	(844) 6: www.nyc	(OATH 28-4692 .gov/oath
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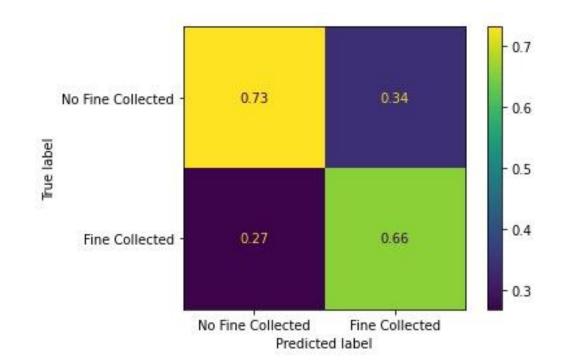
# Model Performance on Training Set

Score Type	Baseline Model	Logistic Regression	Decision Tree	Random Forest	XGBoost
Accuracy Score	52%	64%	62%	66%	66%
Precision Score	40%	57%	54%	60%	60%

Preferred Model: Random Forest

**Accuracy Score: 71%** 

**Precision Score: 66%** 



# **Takeaways**

**NYPD:** Reevaluate ticket issuance approach

**Staten Island**: Inquire why tickets issued in this borough largely resulted in no fine collected

# **Project Next Steps**

**Data expansion**: Include other issuing agencies (such as the Department of Buildings)

**Feature Engineering**: Obtain additional census data to expand neighborhood-level information

#### Thank You!

## **Allison Gao**

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