FUNNEL

Analytics in Action: Team Funnel

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what is Funnel?

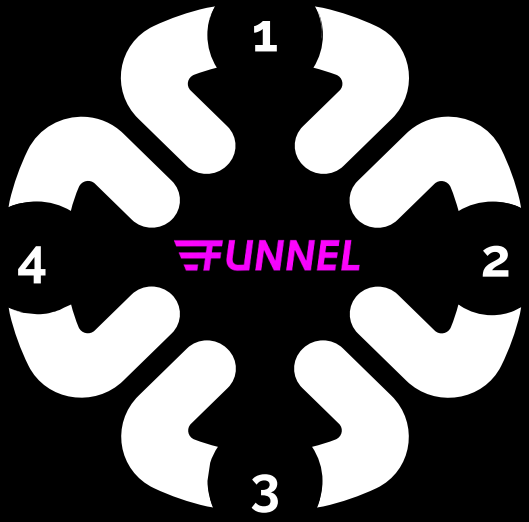
a platform for leasing agents to manage leads

1 leasing agents

people who help you find an apartment

4 communities

clusters of apartments



2 leads

people who are looking for an apartment

3 property owners

building owners who hire leasing agents (these are Funnel's clients)

what are we trying to solve?

help leasing agents prioritize leads based on probability of renting

today → analytics in action → tomorrow

name	property	tour?	...
aaa	bbb	ccc	
xxx	yyy	zzz	
mmm	nnn	ppp	
...	...	...	

name	...
aaa	...
bbb	...
ccc	...
ddd	...
eee	...
xxx	...
yyy	...
...	...

probability of renting

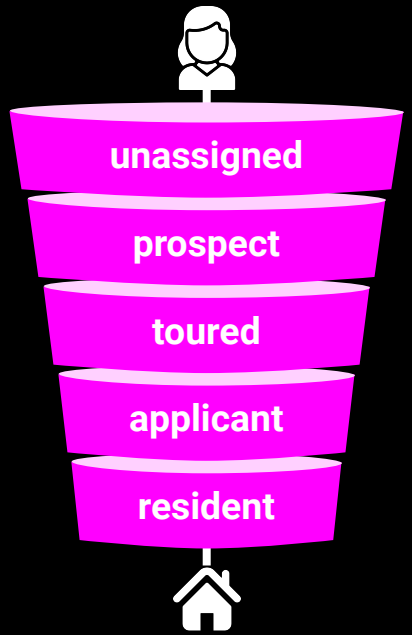
+

-

leasing agents have to deal with hundreds of leads at the same time without clear guidance on how to sort them

what data did we get?

more information becomes available as leads advance through the funnel



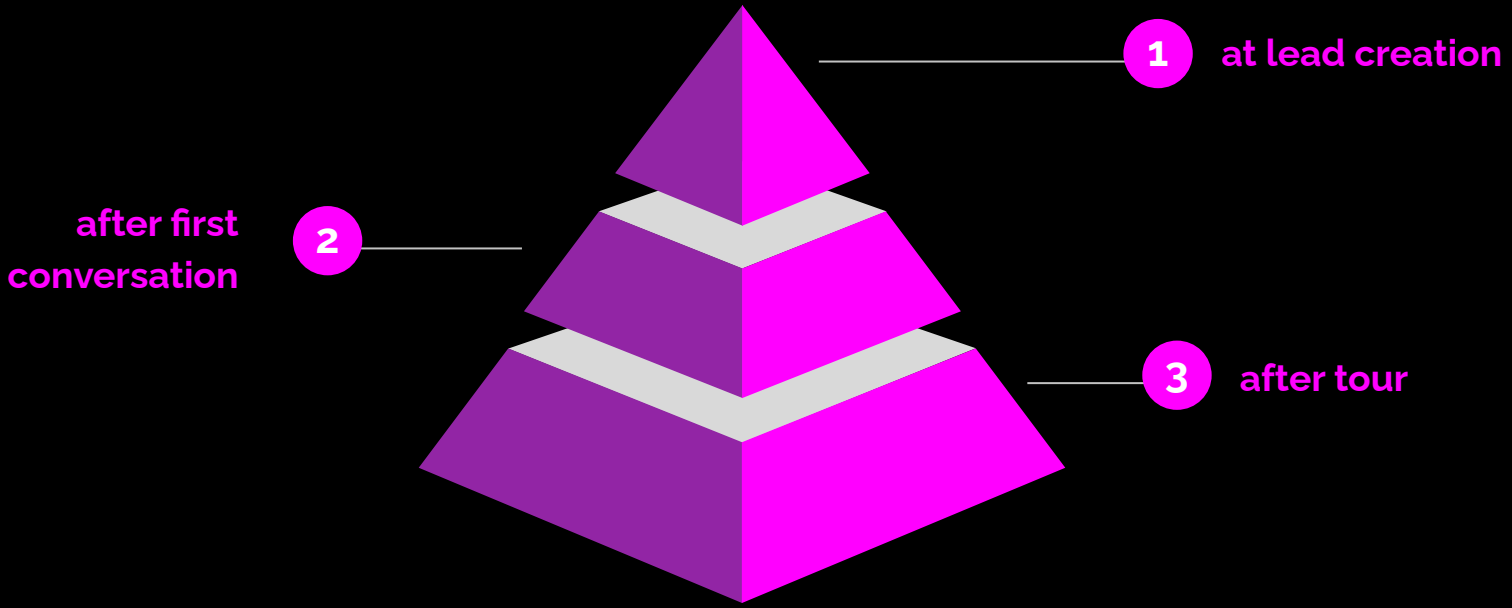
- lead info, origin source, property of interest
- interactions with the leasing agent
- scheduling and outcome of the visits
- date and status of the application*
- dependent variable

the timing of data availability is key when defining predictive model(s)

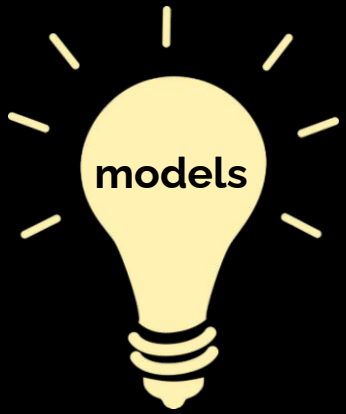
* not used (all renters have to become applicants first)

problem: different data at different times

solution: one model per stage of application process



aspects of the modelling process



logistic regression
random forest
xgboost
catboost

10%
20%
25%

engineering new features:
time differences
text analysis

machine learning for business

business goal

rank leads in terms of probability of renting

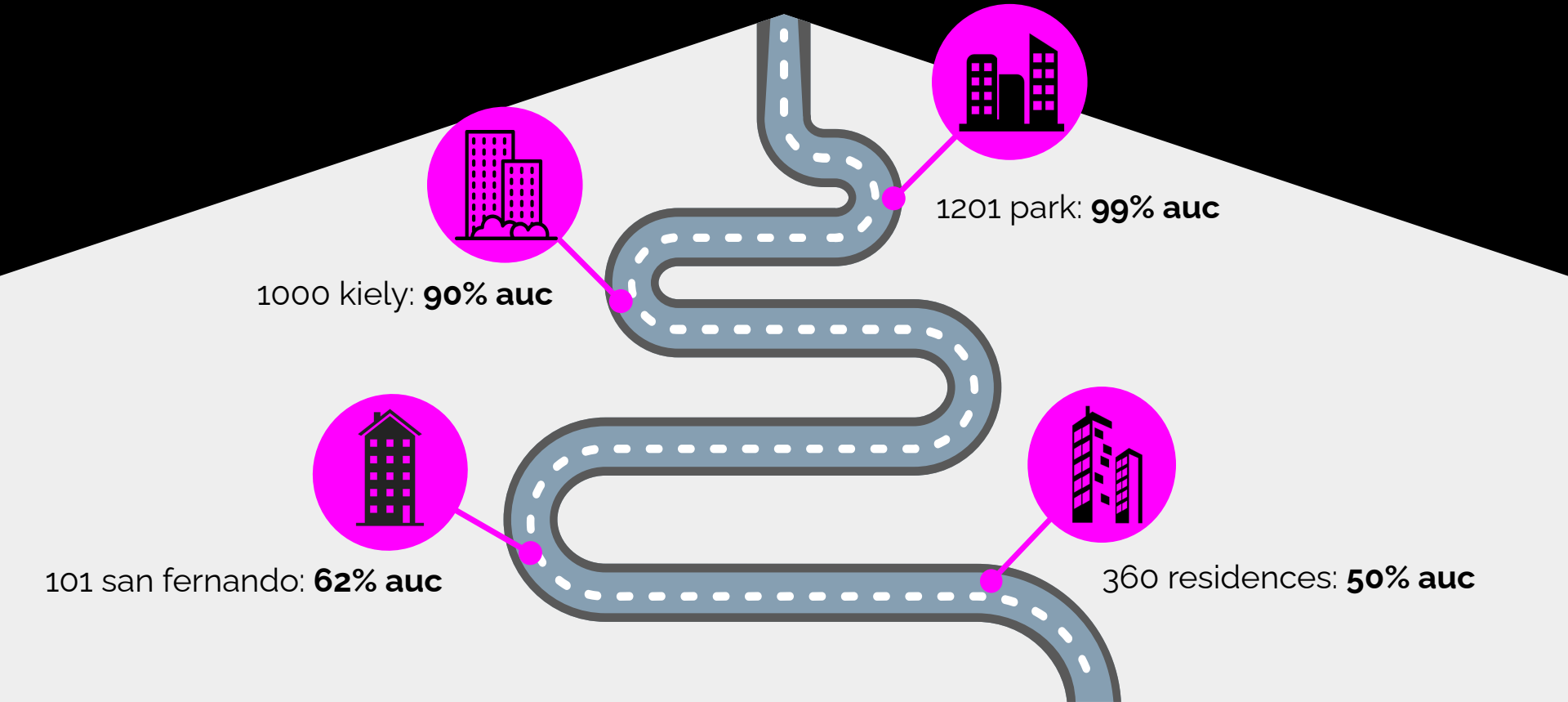
machine learning metrics

- determine optimal model
- tune hyperparameters
- evaluate model performance

auc

percentage of leads that are correctly *ordered* in terms of their probability of renting

first stage model: all about the community



second stage model: talk, talk, talk

60.1% AUC

top 4 important features

- conversation medium (sms/ call/ email)
- average text length
- direction of conversation
- number of conversations

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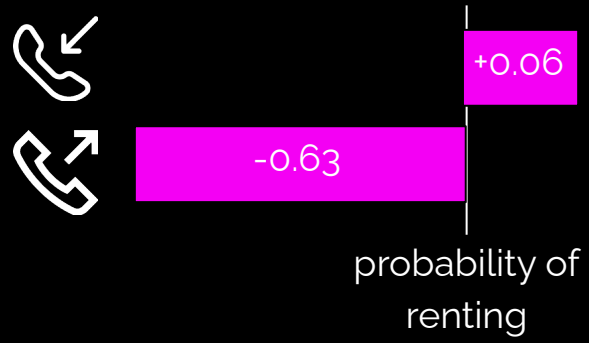
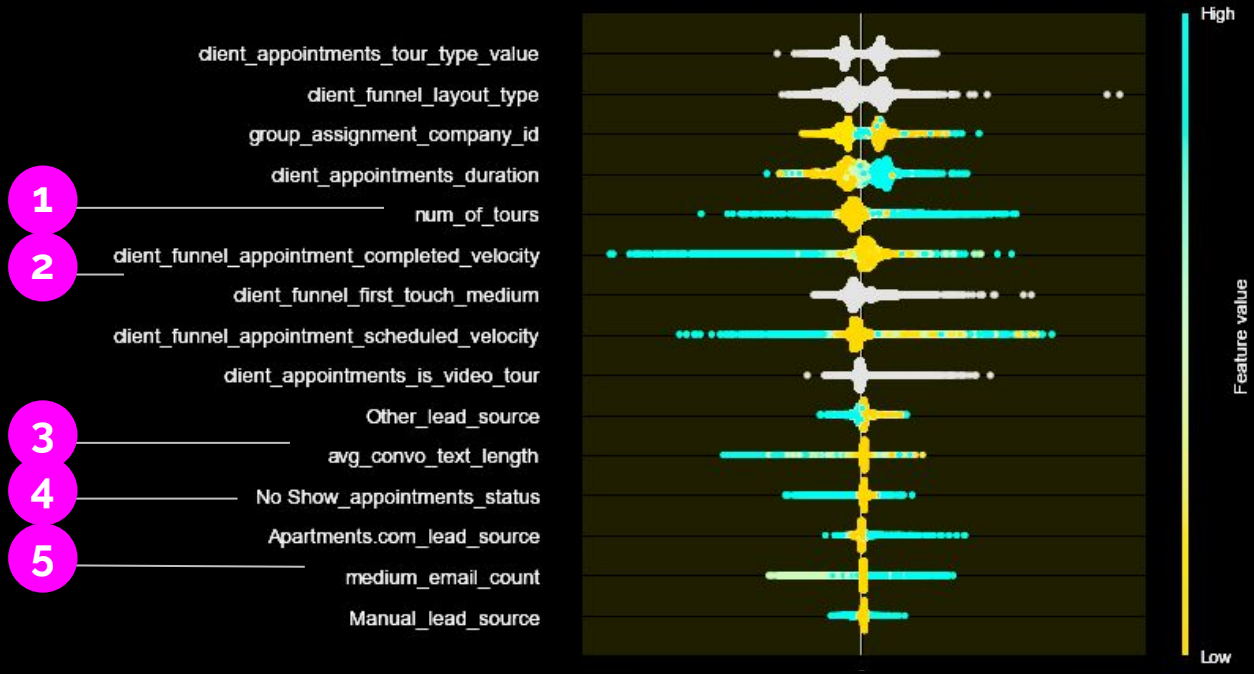


third stage model: the faster, the better



65.4% AUC

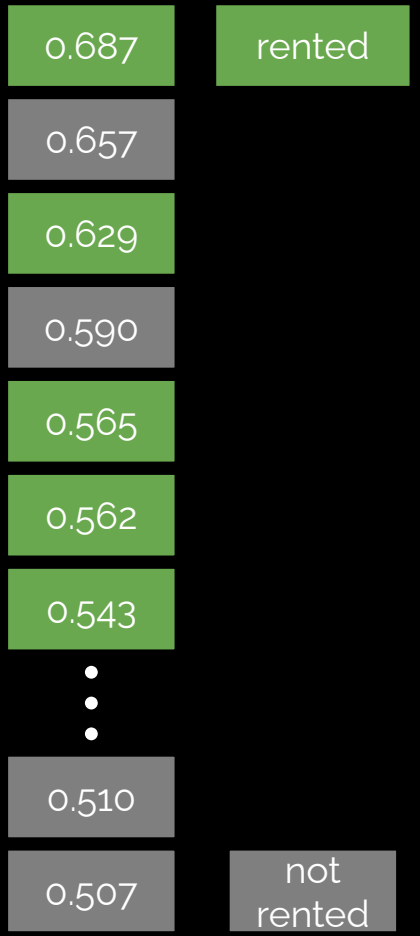
insight:

- number of tours
- completed_velocity
- conversation length
- appointment status
- conversations in email

final deliverable: prob of renting

- for the third stage model:
  - 65.38% of customers are correctly ranked
- rank the customers based on the likelihood of renting

a prioritization tool to rank the leads based on the likelihood of renting



(+ + −) x median $$$ profit = added business value

successful leases (current platform)

additional leases (predictive model)

false negative (predictive model)

thank you!