REAL ESTATE PRICE CHANGE PREDICTION IN **YEREVAN** BASED ON **LOCATION**

| RESEARCH PROPOSAL

Lecturer: **Arthur Pokrikyan**

Authors: **Karakhanyan Aram**
Lachinyan Izabela
Hakobyan Hakob

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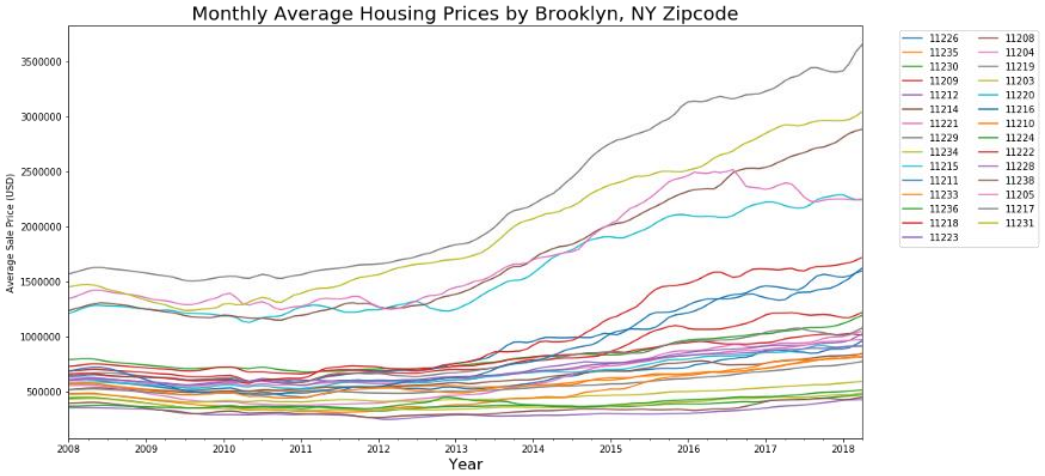
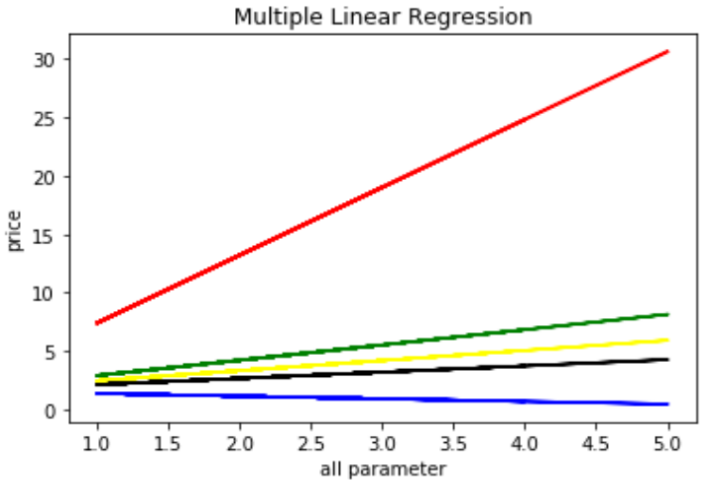
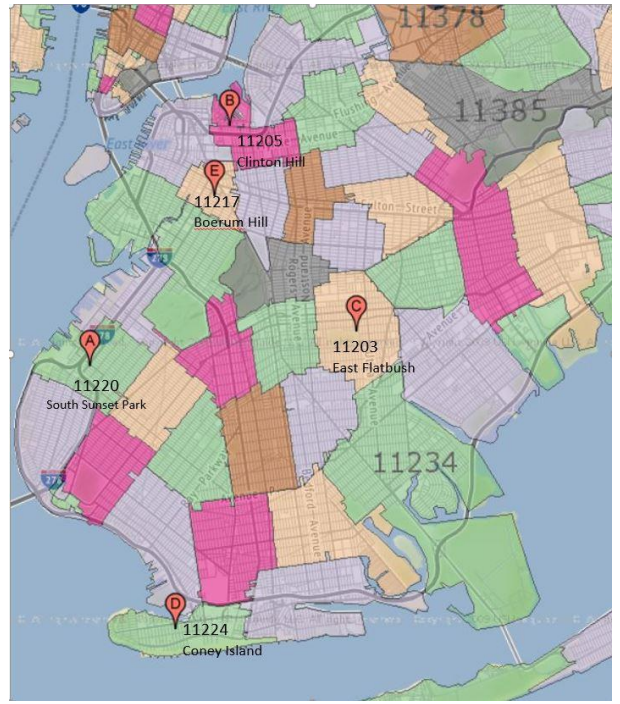
THE PROBLEM IS THAT…

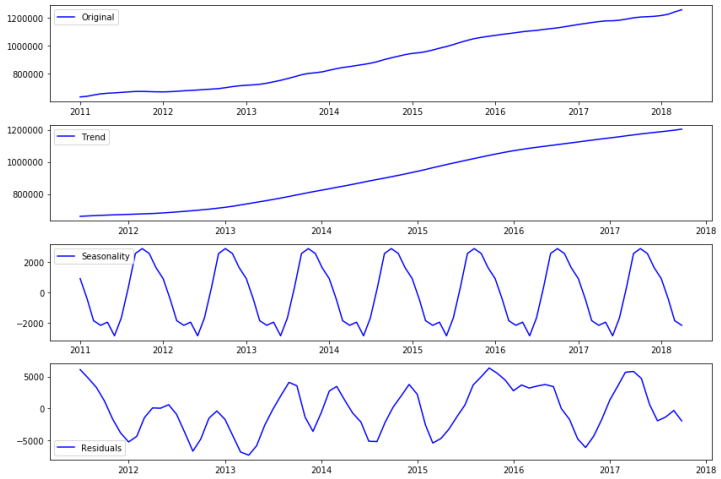
PRICE **FLUCTUATIONS** RELATED TO SEASONAL, LOCATIONAL, ECONOMICAL AND OTHER FACTORS ARE **CHALLENGING** FOR **INVESTORS**.

WHAT HAS ALREADY BEEN DONE IS…

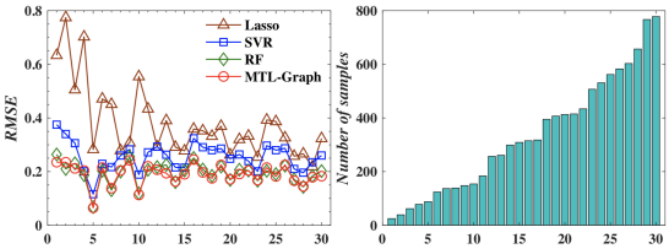








Category	Name of features	Descriptions	Min.	Max.	Median	Std. Dev.
House	#BEDROOM	The number of bedrooms	1	5	–	–
	#BATHROOM	The number of bathrooms	1	3	–	–
	#PARKING	The number of parking spaces	1	5	–	–
	LANDSIZE	The land size of the house (m^2)	340	2500	708.79	291.73
	INCOME	Family weekly income (K)	935	2836	1553.91	387.96
	SAID	Statistical area level	SA1	SA4	–	–
	POSTCODE	Postal code	3000	3996	–	–
Education	SCH_DISTRICT	School district where the house is located	1	100	–	–
	SCH_NEAREST	School closest to the house	1	500	–	–
	PSCH_RANK	The ranking of primary school	3	500	–	–
	SSCH_RANK	The ranking of secondary school	1	500	–	–
Transportation	STN_DIS	Distance to the nearest train station (m)	23	5040	2026.22	1186.78
	STN_TIME	Walking time to the nearest train station (min)	1	126	34.75	20.36
	CBD_PUB_DIS	The train distance to city center (m)	1300	82600	35239.52	14594.42
	CBD_PUB_TIME	The train time to city center (min)	6	101	48.33	16.64
	CBD_PRI_DIS	The self-driving distance to city center (m)	1245	83497	35109.47	14678.34
	CBD_PRI_TIME	The self-driving time to city center (min)	10	120	47.98	18.58
Facility	SHOP_DIS	The distance to nearest shopping center (m)	5	4999	1643.19	961.48
	HOSPITAL_DIS	The distance to nearest hospital (m)	15	5000	1832.83	1102.66
	GP_DIS	The distance to nearest clinic (m)	8	4999	957.21	745.01
	MARKET_DIS	The distance to nearest supermarket (m)	25	5000	1452.63	847.71
SALES_DATE		The sales time of the houses	Jan. 2015	Jan. 2018	–	–
HOUSE_PRICE		The sales price of the houses (K)	262	2090	680.54	353.97

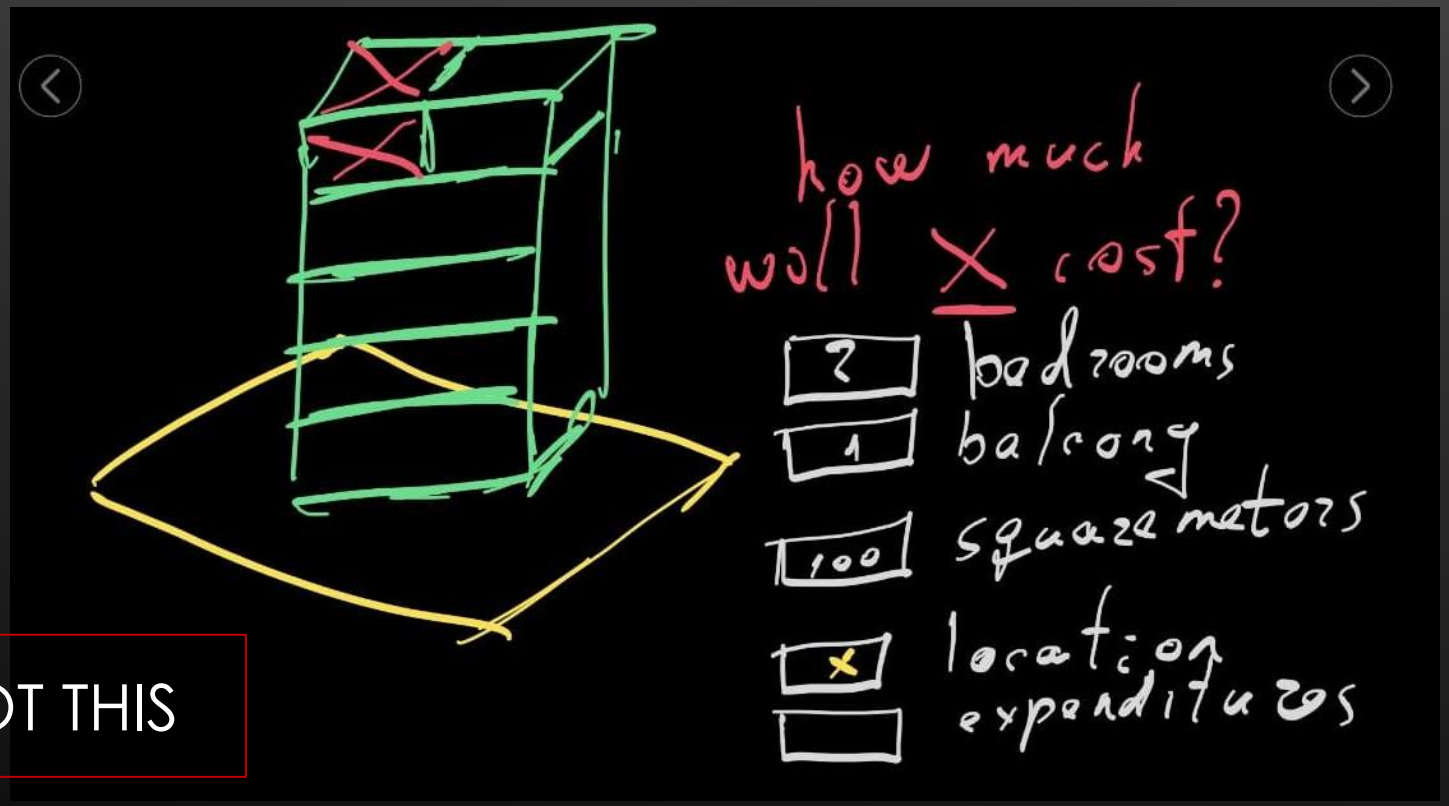


(d) Task definition based on MARKET

THE GOAL OF OUR RESEARCH IS…

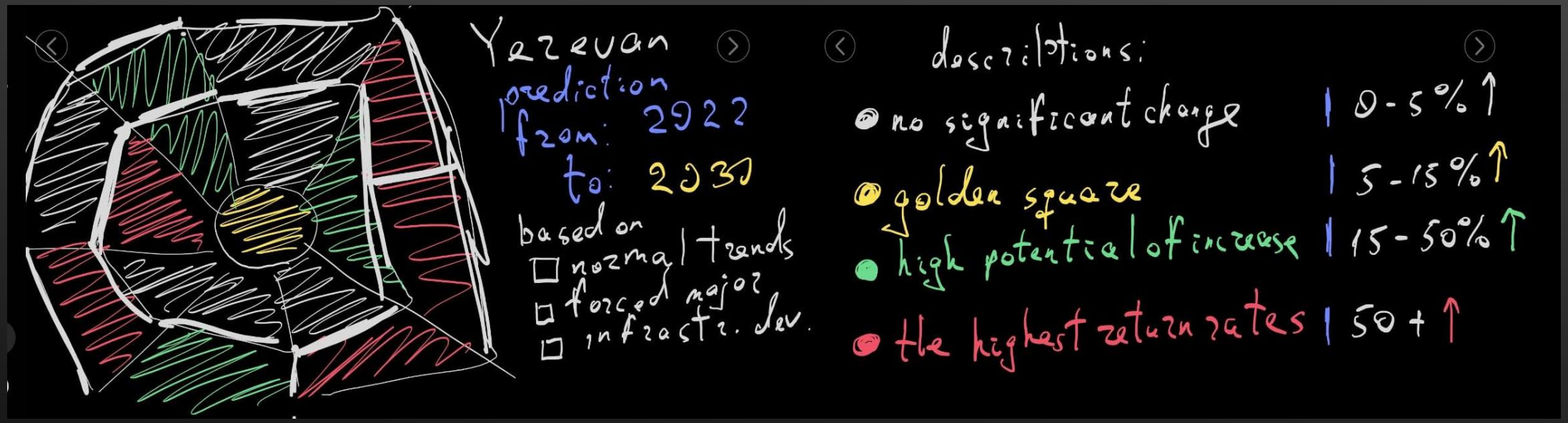
TO FIND OUT HOW MUCH THE **CHANGE** OF REAL ESTATE **PRICES** WILL BE ON A CERTAIN **DATE** IN A CERTAIN **AREA** BASED ON **LOCATIONAL** VARIABLES.

THE VISUALIZATION OF OUR IDEA



NOT THIS

THE VISUALIZATION OF OUR IDEA



BUT THIS

THE MAIN HYPOTHESIS ARE…

- If new projects aimed at ***improving infrastructures*** are implemented in a distinct, then the *price* ***increase*** in that distinct should be ***higher*** than the others.
- ***Inflation*** that is not related to ***natural trends*** (immigration, war, epidemic, etc.) has a ***temporary*** nature, and its effect is ***neutral*** in the ***long run***.
- If the city ***expands*** in any direction, then the ***price increase*** will be the **largest** in those ***directions*** during the observed period.

THE MAIN VARIABLES WE ARE GOING TO USE ARE…

1. Real estate prices as a dependent variable
2. Education-- quality and accessibility of schools, kindergardens
3. Accessibility of metro station
4. Distance and self-driving time from the center of the distinct to the city center
5. Supermarket 24/7
6. Hospitals. clinics
7. Parks, green areas
8. Entertainment areas
9. Shopping centers/malls
10. Migration rate
11. Urbanization rate
12. Number of workplaces

THE MAIN STAGES OF MODELING ARE…

1. time series modeling with ARIMA (*autoregressive integrated moving average*) to predict the future values for the features that tend to change over time;
2. checking the significance levels for each features to chose the most significant ones, using Multiple Linear Regression models
3. computing the average future price for each district in Yerevan having the features mentioned above using Machine Learning.

THE MAIN RISKS ARE …

1. Lack of data
2. Emergency situations
3. Low performance of the model
4. Lack of time, skills, ~~money~~, tools (so called resources)
5. Lack of clarity

TIMELINE OF ACTIVITIES

Stage	Activity	Estimated duration
Research design and planning	Finalise research problem/questions	two day
	Develop research design	four day
	Prepare research proposal	one week
Literature review	Search, capture and synthesise relevant literature	one week
	Prepare draft literature review	five day
Data collection	Finalise sampling plan	two week
	Develop data collection instrument	one and half week
	Pre-test/pilot data collection instrument	one week
	Carry out data collection	two week
	Write up data collection	one week
Data analysis	Prepare data for analysis	one month
	Analyse data	two month
	Draw conclusions/ recommendations	five day
Writing up	Final draft of application	three month
	Review draft	one week
	Final editing	one week
	Submit to extramural funder	six month

THE TEAM

ARAM

IZABELA

HAKOB

THE BUDGET

0.00

DOLLARS

FOR MORE INFORMATION PLEASE SCAN THIS QR

THANK YOU FOR YOUR INTEREST IN ECONOMICS

ARAM, IZA & HAKOB WILL RETURN