

NLP for House Price Prediction

EPPS7V81

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House Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	SALE TYPE	SOLD DATE	PROPERTY TYPE	ADDRESS	CITY	STATE OR DISTRICT	ZIP OR POSTAL CODE	PRICE	BEDS	BATHS	LOCATION	SQUARE FEET	LOT SIZE	YEAR BUILT		\$/SQUARE FOOT	HOA/MONTH	STATUS
2	PAST SALE	November-20	Single Fam	8801 Bear	Frisco	TX	75036	535000	4	3.5	Waterford	2743	11718	2000		195	40	Sold
3	PAST SALE	July-21-20	Single Fam	1617 Cars	Frisco	TX	75033	559000	4	3	The Trails	2303	11238	2000		243	58	Sold
4	PAST SALE	February-1	Single Fam	1827 Bridl	Frisco	TX	75036	1295000	5	5.5	Phillips Cre	4486	10716	2013		289	192	Sold
5	PAST SALE	April-29-20	Single Fam	1692 Dow	Frisco	TX	75036	379900	4	2.5	Waterford	2172	8451	2000		175	41	Sold
6	PAST SALE	March-29-	Single Fam	6963 Wast	Frisco	TX	75036	1075000	4	4.5	Phillips Cre	4548	11718	2014		236	205	Sold
7	PAST SALE	February-4	Single Fam	7009 Red C	Odessa	TX	79765		4	2	Parks Bell	1836	6534	2022				Sold
8	PAST SALE	October-1	Single Fam	8620 Barlc	Frisco	TX	75036	625000	4	3	Oakmont A	2711	7884	2015		231	54	Sold
9	PAST SALE	June-4-20	Single Fam	7590 Big B	Frisco	TX	75036	849900	5	4.5	Phillips Cre	4409	9365	2019		193	182	Sold
10	PAST SALE	June-2-20	Single Fam	1330 Corr	Frisco	TX	75036	949900	4	3.5	Phillips Cre	3922	9104	2016		242	182	Sold
11	PAST SALE	July-21-20	Single Fam	2520 Berkl	Frisco	TX	75036	550000	4	3	Wynngate	3593	10716	2006		153	46	Sold
12	PAST SALE	May-16-20	Single Fam	7070 Coult	Frisco	TX	75036	1099999	5	4.5	Phillips Cre	4001	8059	2018		275	182	Sold
13	PAST SALE	April-25-20	Single Fam	6852 Wast	Frisco	TX	75036	1550000	5	5.5	Phillips Cre	4670	12153	2016		332	195	Sold
14	PAST SALE	August-11-	Single Fam	769 Sweet	Frisco	TX	75036	599900	3	2	Phillips Cre	2181	6447	2013		275	185	Sold
15	PAST SALE	February-2	Single Fam	8274 Sylva	Frisco	TX	75036	699900	4	3.5	Phillips Cre	2870	8146	2015		244	182	Sold
16	PAST SALE	January-31	Single Fam	2218 Chaf	Frisco	TX	75036	929000	5	4.5	Phillips Cre	4240	8233	2020		219	182	Sold
17	PAST SALE	April-20-20	Single Fam	8248 Bear	Frisco	TX	75036	575000	4	3.5	Westfalls V	3001	7928	1999		192	54	Sold
18	PAST SALE	April-1-20	Single Fam	8833 Bear	Frisco	TX	75036	369950	3	2	Waterford	2382	8407	2000		155	41	Sold
19	PAST SALE	March-11-	Single Fam	1924 Idlew	Frisco	TX	75036	550000	4	3.5	Westfalls V	3812	8015	2003		144	50	Sold
20	PAST SALE	July-6-20	Single Fam	1364 Rollir	Frisco	TX	75036	650000	4	4.5	Phillips Cre	3657	7275	2015		178	175	Sold
21	PAST SALE	April-19-20	Single Fam	8350 Robe	Frisco	TX	75036	545000	4	3.5	Heritage V	2831	6795	2002		193	50	Sold
22	PAST SALE	April-29-20	Single Fam	2290 Flat C	Frisco	TX	75036	985000	5	4.5	Phillips Cre	3765	9670	2017		262	182	Sold
23	PAST SALE	August-26-	Single Fam	2250 Lead	Frisco	TX	75036	783424	5	4.5	Phillips Cre	4100	8233	2021		191	182	Sold
24	PAST SALE	April-25-20	Single Fam	1097 Bonn	Frisco	TX	75036	975000	5	4	Phillips Cre	3976	8886	2016		245	192	Sold
25	PAST SALE	May-6-20	Single Fam	9202 Wind	Frisco	TX	75033	489000	5	3.5	The Trails	3314	10454	2001		148	58	Sold
26	PAST SALE	July-23-20	Single Fam	2194 Ange	Frisco	TX	75036	499950	5	4	Heritage V	3233	8538	2005		155	45	Sold

House Description 1



About This Home

Perfectly updated home on greenbelt lot within Panther Creek Estates! Exquisitely and tastefully updated throughout. Entry leads to stacked living & dining room, and study with French doors. Kitchen boasts a large island, gas range and granite countertops and opens to large family room with a beautiful gas fireplace. Masterbed has a view of the greenbelt, dual vanities, separate shower, garden tub and custom walk-in closet. Beautiful backyard with covered patio and flagstone patio. Conveniently located to restaurants, shopping, schools and major highways. Move in ready!

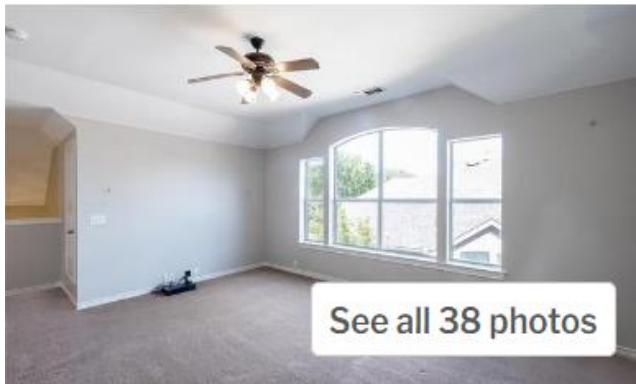


House Description 2



About This Home

MULTIPLE OFFERS! BEST AND HIGHEST MONDAY AFTERNOON 12PM(04-24-2023)! Beautiful home located in a quiet and cozy neighborhood in the heart of Frisco with excellent Frisco ISD! This Spacious house offers wonderful open floor plan! 4 bed with 3 bath, and 2 living area home and Game room. Tile entry which leads all the way into a huge kitchen with lots of cabinet space and big Island, and also an breakfast Area. BRAND NEW stainless steel appliances including Microwave, Oven, Dishwasher and Cook Top are just installed! Open family room with fire place boasts high ceilings, large entertaining spaces, and an abundance of natural light throughout. This 4 Bed 3 Bath home has 2 beds and the private master suite downstairs. The primary bathroom is equipped with a garden tub, a shower stall, a personal toilet room, and a large walk-in closet. Covered back porch with fenced backyard offers you full of privacy. This house has been well kept and is in great shape to become your new home!



[See all 38 photos](#)

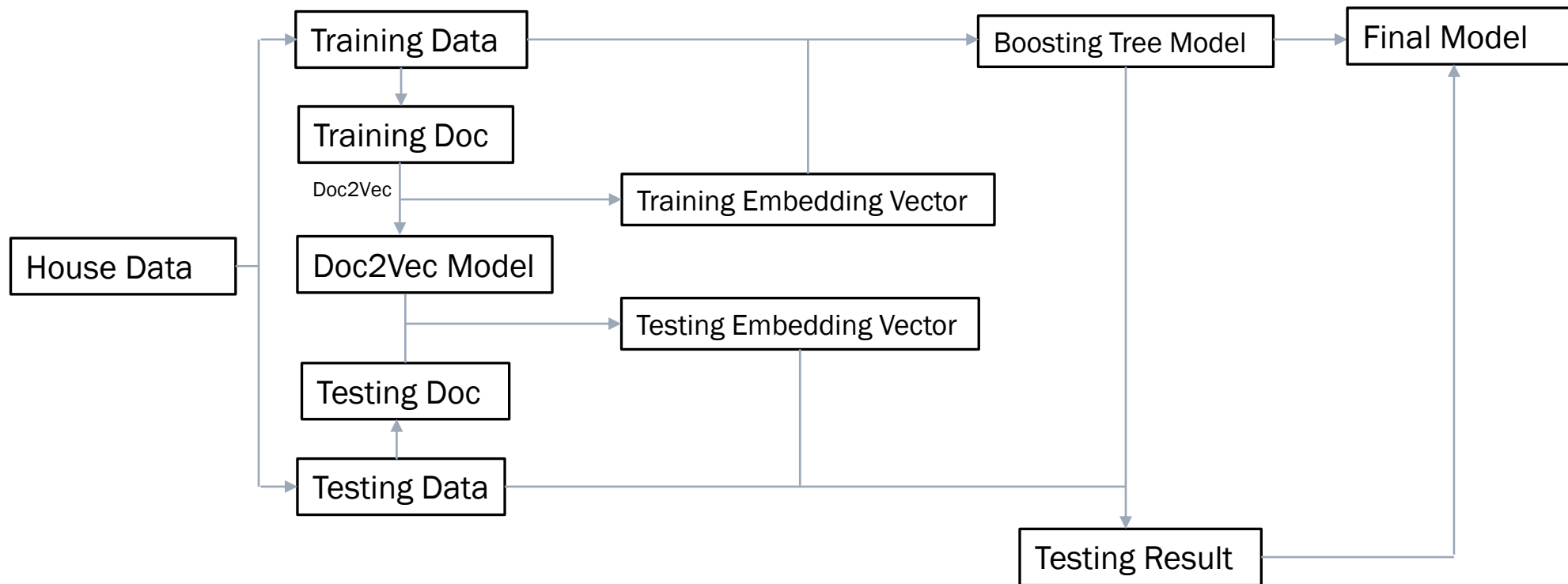
Purpose

- ❖ Convert the house description docs to embedding vectors by NLP
- ❖ Use embedding vectors and house characteristics to build Gradient Boosting Tree model

Research Method

- Word Embedding
- Doc2Vec
- Gradient Boosting Tree

Workflow



Reference

1. <https://arxiv.org/abs/1405.4053>
2. <https://towardsdatascience.com/word2vec-skip-gram-model-part-1-intuition-78614e4d6e0b>
3. <http://mccormickml.com/2017/01/11/word2vec-tutorial-part-2-negative-sampling/>
4. <https://arxiv.org/abs/1710.04324>
5. <https://www.jmlr.org/papers/volume3/bengio03a/bengio03a.pdf>

Thank You

