

# Your Crib's Climate Cost

Predicting housing prices in the era of climate change

By Aroob Abdelhamid, PhD Chemistry

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# Climate change is worsening!

San Francisco  
2020

## As wildfires rage, climate experts warn: The future we were worried about is here

Wildfires in the U.S., Australia and Siberia have driven home how climate change is already threatening to destroy ecosystems in various parts of the world.

nbcnews

theguardian.com: Frederic Larson/AP

Alabama  
2020

cnn.com: Joe Raedle/Getty Images

More people/ investors are considering climate change when purchasing a home, especially with the increase of remote work!



<https://www.wsj.com/articles/if-you-sell-a-house-these-days-the-buyer-might-be-a-pension-fund-11617544801>



**“73 percent** of millennials say climate change affected where they planned to live.”

-Marie Haaland of the NYPost, **“Majority of young Americans say climate change affects their major life decisions”**

Where should I buy a house so that climate change doesn't decrease its value or worse?

My webapp will predict the effects of climate change (wildfires, floods, temperature, precipitation) on future housing prices

# Data Sources and Analysis

## Datasets

- Housing prices and parameters
    - Zillow: 69 MB, RedFin: 948 MB
  - &
  - Past precipitation and temperature:
    - Carnegie Mellon University Dataset; 300 MB
  - Number of flooding events
    - NOAA's Storm Events Database; 800 MB
- ↓
- Future precipitation and Temperature
    - NASA NEX DCP30; ~60 GB

## Analyses

- Autocorrelation Function / Seasonal Decompositions

↓

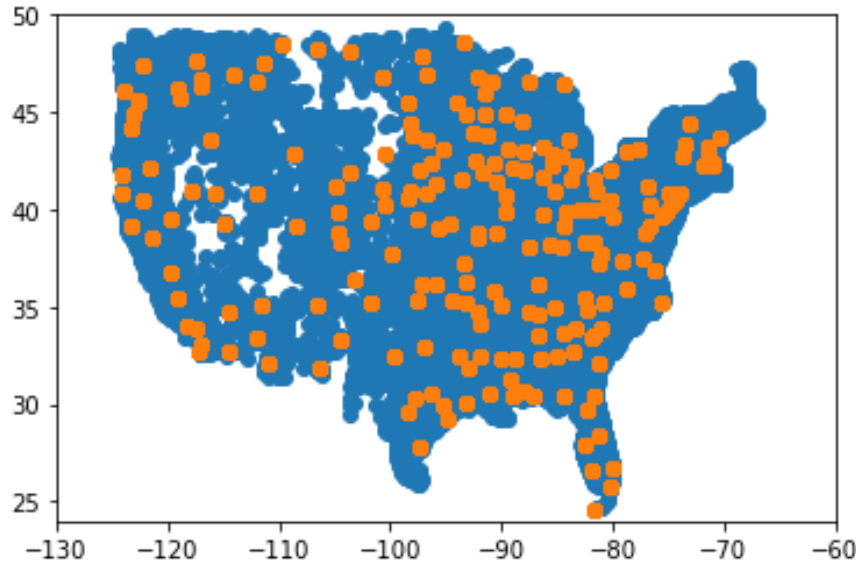
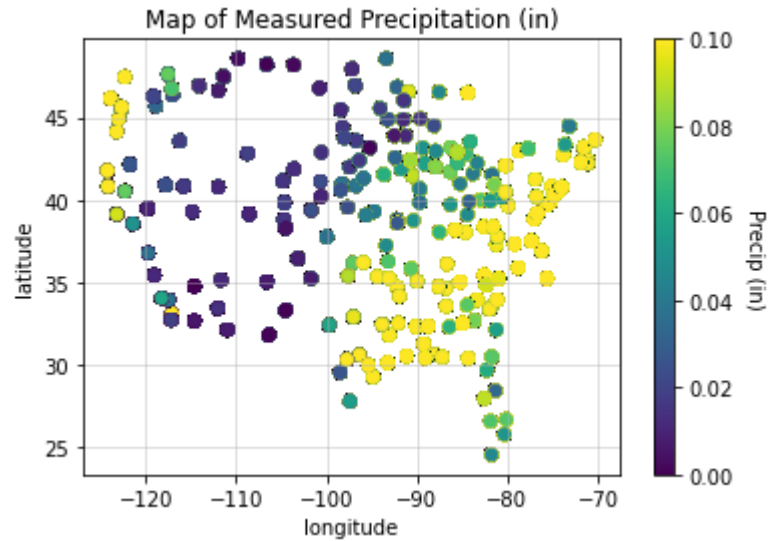
Multi-variate (linear) Regressions  
OR  
Auto Regressive Integrated Moving Average (ARIMA) time series analysis

↓

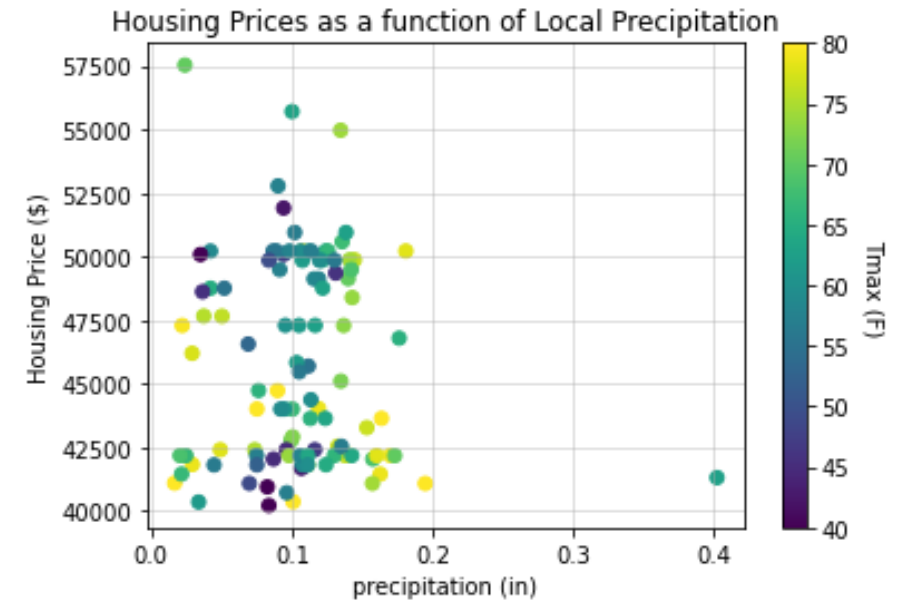
FORECAST!

←

# Current Progress!



CMU  
Temperature/  
Precipitation Data  
(top) merged  
with Zillow data  
(bottom, blue)  
with the same  
spatial and time  
resolution





# Thank You! Questions?



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## MOTIVATION

Predicting  
future housing  
prices for  
remote  
workers and  
real estate  
investors

## DATA SOURCES

Housing  
Precipitation  
Temperature

## ANALYSIS

Linear  
Regression  
ARIMA