

Using Google searches to track diseases dynamically

```
begin
%% Load data %%
CDC=load(CDC ILI Data)           (ONE COLUMN OF VALUES)
X=load(Google search Data)       (MULTIPLE COLUMNS OF VALUES)

%% initialize output arrays %%
Y=zeros(1:end.of.predictions)    (INITIALIZE ARRAY TO STORE PREDICTIONS)
coefficients=zeros(1:end.of.predictions) (INITIALIZE ARRAY TO STORE COFFS)

%% train models and produce out-of-sample predictions %%
for i = training : end.of.predictions
    CDC ← standardize(CDC)      (PERHAPS USE A TRANSFORM:Z-SCORE, LOGIT)
    X ← standardize(X)          (PERHAPS USE A TRANSFORM:Z-SCORE, LOGIT)
    model=LASSOroutine.fit(CDC[1 : i] ~ X[1 : i]) (TRAINING: IN-SAMPLE MODEL )
    coefficients(i) ← model(coefficients)
    Y(i + 1)=LASSOroutine.predict(model, X(i + 1)) (PRODUCE OUT-OF-SAMPLE
                                                    PREDICTIONS)
    if(i == training)
        Y[1:i]=LASSOroutine.predict(model, X[1:i]) IN -SAMPLE PREDICTIONS
    end
end
end
```