|  |  |  |
| --- | --- | --- |
| **param** | Default prior | Custom prior |
| **intercept** | numpyro.distributions.HalfNormal(scale=2) |  |
| **coef\_trend** | numpyro.distributions.Normal(loc=0., scale=1.) |  |
| **expo\_trend** | numpyro.distributions.Uniform(low=0.5, high=1.5) |  |
| **gamma\_seasonality** | numpyro.distributions.Normal(loc=0., scale=1.) |  |
| **coef\_extra\_features** | numpyro.distributions.Normal(loc=0., scale=1.) |  |
| **Sigma** | numpyro.distributions.Gamma(concentration=1., rate=1.) |  |
| **half\_max\_effective\_concentration** | numpyro.distributions.Gamma(concentration=1., rate=1.) |  |
| **slope** | numpyro.distributions.Gamma(concentration=1., rate=1.) |  |
| **exponent** | numpyro.distributions.Beta(concentration1=9., concentration0=1.) |  |
| **lag\_weight** | numpyro.distributions.Beta(concentration1=2., concentration0=1.) |  |
| **ad\_effect\_retention\_rate** | numpyro.distributions.Beta(concentration1=1., concentration0=1.) |  |
| **peak\_effect\_delay** | numpyro.distributions.HalfNormal(scale=2.) |  |
|  |  |  |
|  |  |  |
|  |  |  |

custom\_priors={" **coef\_extra\_features** ": numpyro.distributions.Normal(loc=0.1, scale=.5), }

before: mean std median 5.0% 95.0% n\_eff r\_hat

coef\_extra\_features[0] 0.02 0.01 0.02 0.01 0.03 1130.49 1.00

coef\_extra\_features[1] 0.00 0.00 0.00 -0.00 0.01 3180.27 1.00

coef\_extra\_features[2] 0.00 0.01 0.00 -0.01 0.01 2194.43 1.00

after : mean std median 5.0% 95.0% n\_eff r\_hat

coef\_extra\_features[0] 0.02 0.01 0.02 0.01 0.04 1660.53 1.00

coef\_extra\_features[1] 0.00 0.00 0.00 -0.00 0.01 3605.67 1.00

coef\_extra\_features[2] 0.00 0.01 0.00 -0.01 0.02 3225.20 1.00

« intercept » : numpyro.distributions.HalfNormal(scale=1)

Before: intercept[0] 0.11 0.06 0.10 0.00 0.19 1962.15 1.00

After : intercept[0] 0.11 0.06 0.11 0.00 0.19 807.49 1.00

MAPE : 7.389

"coef\_trend":numpyro.distributions.Normal(loc=.1, scale=1.)

Before : coef\_trend[0] -0.01 0.01 -0.01 -0.03 0.00 463.14 1.01

After : coef\_trend[0] -0.01 0.01 -0.01 -0.04 0.00 338.67 1.01

MAPE : 7.385

"expo\_trend":numpyro.distributions.Uniform(low=0.5, high=1.8)

Before: expo\_trend 0.65 0.12 0.62 0.50 0.82 438.13 1.01

After: expo\_trend 0.75 0.21 0.68 0.50 1.08 3.94 2.19

MAPE : 7.087

"sigma":numpyro.distributions.Gamma(concentration=1., rate=2.)

Before: sigma[0] 0.17 0.01 0.17 0.15 0.18 12.71 1.20

Didn’t change

"exponent":numpyro.distributions.Beta(concentration1=3., concentration0=1.)

Before : exponent[0] 0.95 0.04 0.96 0.90 1.00 69.85 1.04

exponent[1] 0.90 0.09 0.93 0.78 1.00 38.82 1.05

exponent[2] 0.90 0.08 0.92 0.79 1.00 388.49 1.02

exponent[3] 0.87 0.10 0.88 0.76 1.00 22.64 1.11

After:

MAPE : 7.641

Didn’t change: back to 7.087

Lag\_weight: c1[1]=1.5

Before: lag\_weight[0] 0.04 0.02 0.04 0.00 0.06 55.97 1.05

lag\_weight[1] 0.62 0.28 0.69 0.19 1.00 10.98 1.21

lag\_weight[2] 0.90 0.14 0.94 0.88 0.99 97.44 1.02

lag\_weight[3] 0.81 0.20 0.87 0.50 1.00 33.67 1.08