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100%|████████████| 1.68M/1.68M [00:00<00:00, 124MB/s]

Modeling 15 apps covering ~88.5% of DAU

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/ij7lecz3.json

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/__tdzjhm.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=49583', 'data', 'file=/tmp/tmpr1qan339/ij7lecz3.json', 'init=/tmp/tmpr1qan339/__tdzjhm.json', 'output', 'file=/tmp/tmpr1qan339/prophet_model35237p1y/prophet_model-20251025074217.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:42:17 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:42:19 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/mqkminni.json

[Quora] ✅ saved | α=0.45 | model=ElasticNetCV, ENet α=0.004264, l1_ratio=0.80

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/k7jmcawz.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=44590', 'data', 'file=/tmp/tmpr1qan339/mqkminni.json', 'init=/tmp/tmpr1qan339/k7jmcawz.json', 'output', 'file=/tmp/tmpr1qan339/prophet_model7bqktin3/prophet_model-20251025074228.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:42:28 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:42:32 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/s3yfs_3e.json

[Reddit] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.1593, l1_ratio=0.05

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/4emjunvd.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=94635', 'data', 'file=/tmp/tmpr1qan339/s3yfs_3e.json', 'init=/tmp/tmpr1qan339/4emjunvd.json', 'output', 'file=/tmp/tmpr1qan339/prophet_model2f3d_0bg/prophet_model-20251025074242.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:42:42 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:42:43 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/a3ilxd7i.json

[Snapchat] ✅ saved | α=0.50 | model=ElasticNetCV, ENet α=0.007979, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/uw0p6js1.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=91915', 'data', 'file=/tmp/tmpr1qan339/a3ilxd7i.json', 'init=/tmp/tmpr1qan339/uw0p6js1.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modellcjfoez5/prophet_model-20251025074251.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:42:51 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:42:54 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/p3kp09ff.json

[WhatsApp] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.001361, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/xhqu3uzc.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=8720', 'data', 'file=/tmp/tmpr1qan339/p3kp09ff.json', 'init=/tmp/tmpr1qan339/xhqu3uzc.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelyp2f_m1q/prophet_model-20251025074302.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:43:02 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:43:06 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/czaf9q8c.json

[Pinterest] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.01301, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/hog6xi54.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=35156', 'data', 'file=/tmp/tmpr1qan339/czaf9q8c.json', 'init=/tmp/tmpr1qan339/hog6xi54.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modeleatk0r_l/prophet_model-20251025074314.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:43:14 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:43:17 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/yczth8lx.json

[LinkedIn] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.001249, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/ly7_jw2c.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=69926', 'data', 'file=/tmp/tmpr1qan339/yczth8lx.json', 'init=/tmp/tmpr1qan339/ly7_jw2c.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelsx10nk_t/prophet_model-20251025074324.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:43:24 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:43:31 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/5blbgtyb.json

[WeChat] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.001971, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/coj2ehwu.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=59774', 'data', 'file=/tmp/tmpr1qan339/5blbgtyb.json', 'init=/tmp/tmpr1qan339/coj2ehwu.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelrhnye5fi/prophet_model-20251025074339.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:43:39 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:43:43 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/8d1gf2gp.json

[X (formerly Twitter)] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.0009886, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/lyi1ky_h.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=5984', 'data', 'file=/tmp/tmpr1qan339/8d1gf2gp.json', 'init=/tmp/tmpr1qan339/lyi1ky_h.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modely4rqnngt/prophet_model-20251025074351.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:43:51 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:43:56 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/26hlrka0.json

[Telegram] ✅ saved | α=0.00 | model=ElasticNetCV, ENet α=0.0007541, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/45zb5o58.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=78050', 'data', 'file=/tmp/tmpr1qan339/26hlrka0.json', 'init=/tmp/tmpr1qan339/45zb5o58.json', 'output', 'file=/tmp/tmpr1qan339/prophet_model60ni24kj/prophet_model-20251025074403.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:44:03 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:44:08 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/bs7gt9sz.json

[TikTok] ✅ saved | α=0.00 | model=ElasticNetCV, ENet α=0.007938, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/1tzw4_ik.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=9603', 'data', 'file=/tmp/tmpr1qan339/bs7gt9sz.json', 'init=/tmp/tmpr1qan339/1tzw4_ik.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelu43a7qry/prophet_model-20251025074415.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:44:15 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:44:22 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/klw66ujp.json

[Threads] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.0007349, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/99_f86fy.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=31373', 'data', 'file=/tmp/tmpr1qan339/klw66ujp.json', 'init=/tmp/tmpr1qan339/99_f86fy.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelfuzlv0z1/prophet_model-20251025074430.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:44:30 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:44:36 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/1hr771ey.json

[Facebook] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.04255, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/6rh0qpm5.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=17525', 'data', 'file=/tmp/tmpr1qan339/1hr771ey.json', 'init=/tmp/tmpr1qan339/6rh0qpm5.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelftrklcf6/prophet_model-20251025074445.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:44:45 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:44:51 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/zfk4tozk.json

[Instagram] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.06649, l1_ratio=0.80

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/csju75oi.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=57072', 'data', 'file=/tmp/tmpr1qan339/zfk4tozk.json', 'init=/tmp/tmpr1qan339/csju75oi.json', 'output', 'file=/tmp/tmpr1qan339/prophet_model282gozq3/prophet_model-20251025074458.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:44:58 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:45:05 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/2164bmaf.json

[YouTube] ✅ saved | α=1.00 | model=ElasticNetCV, ENet α=0.01539, l1_ratio=0.95

DEBUG:cmdstanpy:input tempfile: /tmp/tmpr1qan339/uvyz0hky.json

DEBUG:cmdstanpy:idx 0

DEBUG:cmdstanpy:running CmdStan, num_threads: None

DEBUG:cmdstanpy:CmdStan args: ['/usr/local/lib/python3.12/dist-packages/prophet/stan_model/prophet_model.bin', 'random', 'seed=87980', 'data', 'file=/tmp/tmpr1qan339/2164bmaf.json', 'init=/tmp/tmpr1qan339/uvyz0hky.json', 'output', 'file=/tmp/tmpr1qan339/prophet_modelb8ulwpwf/prophet_model-20251025074512.csv', 'method=optimize', 'algorithm=lbfgs', 'iter=10000']

07:45:12 - cmdstanpy - INFO - Chain [1] start processing

INFO:cmdstanpy:Chain [1] start processing

07:45:13 - cmdstanpy - INFO - Chain [1] done processing

INFO:cmdstanpy:Chain [1] done processing

[Twitter] ✅ saved | α=0.90 | model=ElasticNetCV, ENet α=0.02103, l1_ratio=0.95

(Checkpointed) AGG HOLDOUT (28d) — MAE: 2461.00 | RMSE: 4015.98 | MAPE: 23.11% | Acc: 76.89%

Prophet-only AGG MAPE: 24.55% → ΔMAPE vs Hybrid: +1.45 pts

Aggregate Holdout (28d) — Acc=76.9% (1−MAPE)