

I've been doing this for models to trade on another platform, and as part of the infrastructure wrote an analytics engine that given a text based request will generate arbitrary analytics across multiple timeframes, be they standard ones such as 15 and 30 minute bars or more obscure and possibly non-aligning ones. If using say 15 and 30 minute bars, analytics would be derived from bars with time ranges such as:

13:00 to 13:15 and 12:30 to 13:00

13:15 to 13:30 and 13:00 to 13:30

13:30 to 13:45 and 13:00 to 13:30

13:45 to 14:00 and 13:30 to 14:00

and so on. Features derived from past shorter time frame bars can be incorporated too so you can get more recent context leading up to a bar being finalised.

I've found that incorporating higher time frames reduces noise in the predictions, but it's not always beneficial overall.

So fundamentally all you need to explore your idea is a source of data with say 1 minute bars, a way to generate bars and produce analytics at other time frames from those, and to combine results together as a set of features to train and predict on. Be careful when using historical data to ensure that you are not accidentally incorporating knowledge of the future, such as using a 13:00 to 13:15 bar with a complete 13:00 to 13:30 one.