**Team of 4. Deadline is Wed, Aug 30 at 8 AM Pacific if interested.**

***One representative submits all team members' resumes and a sheet with the names of your team members.***

I run this through Eric Reiner and he would be fine if a team wants to expand on the topic...Assuming you do not have your own topic.

From: Alumnus Arnab Chakrabarti

**AFP Title:** Characterization of factor performance by economic regime

Ideas of factor rotation and factor timing have drawn the attention of researchers in recent years. A well-referenced paper on “momentum crashes” (reference 4) highlights that factors that do well over time can do poorly in certain regimes. We propose to explore this idea systematically. The first step is to develop a model to determine the state of the economic cycle (reference 1 is a good read): recession, recovery, expansion, and slowdown. The model can use macroeconomic, technical and sentiment-based indicators (such as those used in reference 6). The model may be a classification model if the intent in to broadly identify discrete economic regimes, or a regression model measuring the degree of expansion (-ve if the economy is contracting). The second step is to measure factor performance and discover the functional relationship between economic cyclicality and factor performance. This relationship is not expected to be linear, which makes the problem challenging and worth exploring in an AFP.

Interested students are encouraged to explore the references below. Team members should know Python and machine learning, and the problem should be of interest to them.

References:

1. [http://www.economicprinciples.org/wp-content/uploads/ray\_dalio\_\_how\_the\_economic\_machine\_works\_\_leveragings\_and\_deleveragings.pdf](http://www.economicprinciples.org/wp-content/uploads/ray_dalio__how_the_economic_machine_works__leveragings_and_deleveragings.pdf" \t "_blank)
2. [https://www.factorinvestor.com/blog/2016/6/1/a-factor-investors-perspective-of-the-economic-cycle](https://www.factorinvestor.com/blog/2016/6/1/a-factor-investors-perspective-of-the-economic-cycle" \t "_blank)
3. [https://www.aqr.com/library](https://www.aqr.com/library" \t "_blank)
4. [https://www.aqr.com/library/journal-articles/momentum-crashes](https://www.aqr.com/library/journal-articles/momentum-crashes" \t "_blank)
5. [https://www.researchaffiliates.com/en\_us/insights/publications.insights.html#/page=0/search=](https://www.researchaffiliates.com/en_us/insights/publications.insights.html" \l "/page=0/search=" \t "_blank)
6. [https://www.simplestockmodel.com/composite/](https://www.simplestockmodel.com/composite/" \t "_blank)