WIDS - Accio Alpha
Weekly summary as of Jan 6, 2026

Week 1:

Started off with basic probability theory and some concepts of data analysis followed by a numerical assignment based on the same. Then moved onto Python libraries like matplotlib , numpy and pandas followed by a coding assignment using numerous methods and functions in the mentioned libraries.

Week 2:

Learned about simple linear regression and the methods and functions in the statsmodels library in python . Also learnt about time series analysis , learning to identify if a time series is stationary or not based on mean , variance and also a formal test , called the ADF test , for doing the same . Moved onto pairs trading , where I learnt to implement the ADF test and also the underlying logic behind pairs trading and how it protects the trader from a market crash if and when it happens.

Week 3:

Started with the theory of the Kalman filter and the underlying math behind it - formulation of the kalman gain and the iterative revision of the estimation error used based on the kalman gain. Implemented a basic kalman filter in prediction of a single state which was then extended to a 2D state prediction.