Assignment #4

Trading the volatility surface

Required materials: Python

Directions:

1. Collect standard options quotes across strike prices for the S&P 500 or the stock of your choice.
2. Derive and plot the implied volatility surface.
3. Fit a spline model to the implied volatility curve for each of the maturity dates.
4. Plot the risk-neutral density for one of the maturity dates.
5. Write a trading program that sells over-valued options (those with IVs above the fitted IV curve) and buys undervalued options (those with IVs below the fitted IV curve).