Machine Learning for Asset Allocation with Python
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Topics
1. Modern Asset Allocation: the Max Sharpe Ratio Portfolio
2. Risk parity and Risk Budgeting: allocating risk equally across assets
3. Hierarchical Risk Parity: overcoming problems related to the instability of the covariance matrix
   a. Denoising and detoning a covariance matrix using random matrix theory
   b. Hierarchical clustering: Python implementation from scratch
   c. Matrix Seriation
   d. Recursive bisection
   e. HRP: putting all together
5. How to build an asset allocation API in Python. High level design and implementation
6. Back testing allocation strategies in Python

Programming Language and libraries
- Python
- Pandas
- Numpy
- JupyterLab
- Scipy
- Sklearn
- Plotly

Reading list
- Marcos M. Lopez de Prado, Machine Learning For Asset managers
- Thierry Roncalli, Introduction to Risk Parity and Budgeting