## STATE STREET ${ }_{\text {hoins }}^{\text {cilis }}$ SPDR

## Generate diversified alpha systematically in your core by incorporating machine-learning techniques

We will evaluate the merits of the following portfolio construction techniques to generate alpha:

- The standard diversification approaches (risk parity, equal risk contribution, diversification-based approaches)
- Machine-learning based clustering approaches
- Which ones perform better "out of sample" (in real life)?


Daniel Ung is the Head of Quantitative Research and Analysis, ETF Model Portfolio Solutions at SPDR EMEA \& APAC, the ETF arm of State Street Global Advisors. In this role, he is responsible for providing research on asset allocation using ETFs as well as analysis on how ETFs can be implemented in investment portfolios. Prior to this, he was a senior SPDR ETF Strategist and was in charge of conducting product research and analysis of SPDR ETFs, with a particular focus on smart beta, as well as developing market outlooks, investment themes, and portfolio implementation ideas to help clients achieve their objectives. Before joining State Street Global Advisors, Daniel was a Director of Global Research and Design at S\&P Dow Jones Indices where he led investment research and product index development across different asset classes. Daniel also worked in the Structured Products Group at Barclays Wealth and Investment Management and the Commodities Investor Derivatives Group at BNP Paribas Fortis Bank. Outside of his work responsibilities, Daniel was a guest lecturer to Executive MBA students at the Imperial College Business School. He also published extensively in industry-leading journals, such as the Institutional Investor Journals, and is an associate editor of the Journal of Index Investing. In addition, he holds a master's degree at the Ecole Supérieur de Commerce de Paris (ESCP Europe) and is a CFA, CAIA, CQF and FRM charterholder.

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