Sophisticated risk management and portfolio optimization techniques are advanced methods used by investors and portfolio managers to enhance returns while managing risk. Some examples include:

1. **Modern Portfolio Theory (MPT):** Developed by Harry Markowitz, MPT is a mathematical framework for assembling a portfolio of assets such that the expected return is maximized for a given level of risk. It uses the concept of diversification to reduce risk by allocating investments among various financial instruments.
2. **Value at Risk (VaR):** A statistical technique used to measure and quantify the level of financial risk within a portfolio over a specific time frame. VaR estimates the maximum potential loss with a given confidence level.
3. **Black-Litterman Model:** A model that combines market equilibrium (from the Capital Asset Pricing Model) with investor views to produce optimal portfolio allocations. It addresses some of the limitations of MPT by incorporating expected returns as an input.
4. **Monte Carlo Simulation:** A computational technique that uses random sampling to estimate the probability distribution of possible outcomes for a portfolio. It is often used to assess the impact of risk and uncertainty in investment strategies.
5. **Sharpe Ratio:** A measure of risk-adjusted return. It is calculated by subtracting the risk-free rate from the portfolio's return and then dividing by the portfolio's standard deviation. A higher Sharpe ratio indicates better risk-adjusted performance.
6. **Conditional Value at Risk (CVaR):** An extension of VaR that measures the expected loss exceeding the VaR threshold. It provides a more comprehensive view of tail risk.
7. **Factor Investing:** An investment strategy that involves targeting specific drivers of return, such as size, value, momentum, and quality. Factor models can be used to construct portfolios with desired risk-return characteristics.
8. **Stress Testing:** A simulation technique used to evaluate the resilience of a portfolio under extreme market conditions. It involves testing the portfolio against historical or hypothetical scenarios to assess potential losses.
9. **Dynamic Asset Allocation:** A strategy that involves adjusting the composition of a portfolio over time in response to changing market conditions, risk preferences, and investment objectives. It can include techniques like rebalancing, tactical asset allocation, and risk-parity.
10. **Copula Models:** Used to model the dependence structure between different assets in a portfolio. Copulas help in understanding the joint distribution of asset returns and can be used to optimize portfolio diversification.