

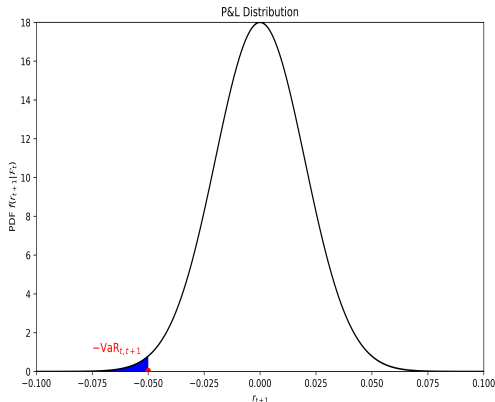
Python Package for Efficient VaR Calculation

Goal: Develop a modular Python package for fast, flexible VaR estimation — focused on equities

Motivation:

- VaR is a core metric in risk management
- Existing solutions are scattered and limited
- Our package streamlines the full workflow

Tools: Generative AI, GitHub, Python, VS Code, LaTeX, standard packages



Main Features of the Package

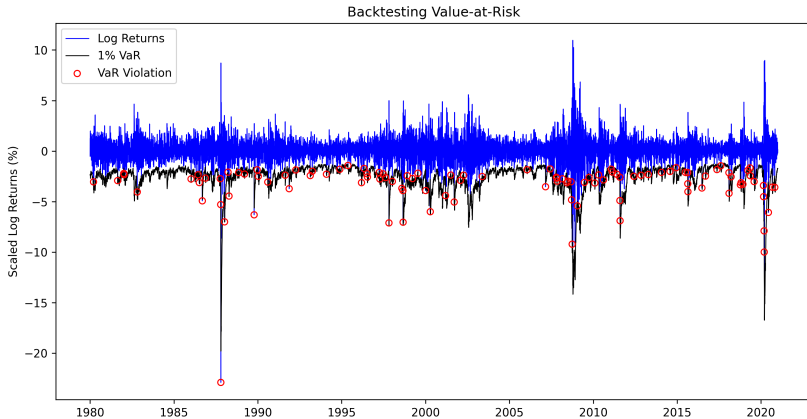
Core Modules:

- Historical iid (Normal, Student's t, etc.)
- Volatility models (GARCH, EWMA, etc.)
- Monte Carlo simulations
- Backtesting functions and visualizations
- Interaction with LLMs for model explanations and guidance

Possible Extensions:

- Web scraping financial data
- Alternative simulations (GBM, bootstrap)
- Factor models (e.g., CAPM)
- Alternative risk metrics (Expected Shortfall, ETV)

Example Usage (S&P500)



Note: We will provide extensive documentation, including a project diary, development plan, and sample usage — all available on [GitHub](#)