

Make a detailed HTML website about quantitative finance and its rich history with the following pages

1. Home: What is Quant?

- Plain-language definition vs. “finance” broadly; what makes it *quantitative* (models, data, automation).
- Diagram of the quant pipeline: **data → hypothesis → model → backtest → risk → execution → monitoring**.
- **Research task:** contrast discretionary PM vs. systematic/quant; 2–3 bullet differences with sources.

2. History & Landscape

- Timeline (1950s–today): Markowitz → Black-Scholes → statistical arbitrage → HFT → ML/alt-data.
- Roles: **quant researcher, strat, risk quant, execution/algo, data engineer, quant dev**—what each actually ships.
- **Research task:** add 4–6 dated milestones; cite primary sources (original papers/official exchange docs where possible).

3. Core Math & Methods

- Short explainers (with equations via KaTeX/MathJax): **linear algebra, stochastic processes (Brownian motion, Ito), optimization (mean-variance, convex), time series (ARIMA, GARCH), ML in quant (trees, boosting, regularization)** — strengths/limits.
- **Research task:** for each method, include **assumptions, failure modes, and a canonical reference**.

4. Strategies & Evaluation

- Strategy archetypes: **trend/momentun, mean reversion/stat-arb, factor investing (value/size/quality), volatility trading, market-making, event-driven, plus portfolio construction**.
- Evaluation: **backtesting discipline, walk-forward, cross-validation for time series, transaction costs, turnover, risk metrics** (vol, drawdown, Sharpe, Sortino, information ratio, max DD), **p-hacking & data-snooping**.
- **Research task:** pick **one strategy** and present:
 - clear hypothesis,
 - realistic cost model,
 - pitfalls (look-ahead bias, survivorship bias),
 - at least **2 academic/industry references** that agree or disagree.

5. Careers & Tooling (optional but encouraged)

- Tech stack: **Python (NumPy/Pandas), C++/Java for low-latency, SQL, KDB/q, job ladders, interview focuses**.
- **Research task:** compare “quant researcher” vs “quant developer” job postings—skills overlap vs differences.