# Siddharth (Syd) Kamath

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EDUCATION

**University of Washington**, Seattle, WA — Graduation: Jan 2024
Master of Science in Computational Finance and Risk Management

**University of Washington**, Seattle, WA — Graduation: June 2022
Bachelor of Science in Mathematics
Bachelor of Science in Human-Centered Design and Engineering

*Annual Dean's List 2018-2022.*

FINANCIAL ANALYSIS AND MODELING SKILLS

- Mean-Variance, Mean-Absolute-Deviation, Expected Shortfall Portfolio Optimization
- Option Pricing, Black-Scholes, Stochastic Volatility Models, Stochastic Calculus
- Linear/Non-linear/Integer programming, Monte-Carlo methods
- VaR and CVaR methodologies, Risk Management
- Time series analysis, financial data forecasting, Stationarity testing
- Maximum Likelihood Estimation (MLE) for model selection, Mean-Reversion Trading

COMPUTER PROGRAMMING SKILLS, INDUSTRY TOOLS

- Experience with: Python, R, Excel,
  - Python: NumPy, SciPy, Pandas, fypy, pymle, yfinance
  - R: CVXR, rugarch, forecast, quantmod
- Experience using: RStudio, Visual Studio Code, Jupyter Notebooks

RELEVANT COURSEWORK

- Stochastic Calculus, Advanced Probability, Optimization, Monte-Carlo methods
- Risk in Financial Institutions, Credit Risk Management, Options and Other Derivatives
- Asset Allocation, Financial Data Science, Investment Science, Data Structures and Algorithms

RESEARCH PROJECTS

**Optimal Mean-Reversion Trading Algorithm**,
*Skills: Python, Stochastic Calculus, Stochastic Volatility Modeling, MLE, Mean-Reversion trading*

- Developed trading algorithms that utilize theoretical results in Optimal Control to determine optimal liquidation and entry times for pairs of assets.
- Used maximum likelihood estimation on observed portfolio data to determine parameters for various stochastic processes.

**Time series data calibration to Stochastic Differential Equations**
*Skills: Stochastic Volatility Models, Financial Data Science, Time Series, Option Pricing*

- Investigated the behavior of various stocks by fitting data to Stochastic Volatility Models
- Priced European options using Fourier and Monte Carlo methods and computed implied volatilities.

**Quantum Algorithm Analysis**
*Skills: Python, Optimization, Quantum Circuit Design,Qiskit*

- Modeled various advancements to Grover's search algorithm utilizing the Qiskit module in Python and summarized results in a comprehensive review paper.

MATHEMATICAL RESEARCH:

- Washington Experimental Research Lab (WXML): Investigations of the properties of surfaces in 3D Hyperbolic space
- Washington Direct Reading Program (WDRP): Independent study of dynamical systems and advanced measure theory

INTERNSHIP

**Machine Learning:** *Tech for Good Inc.* — Jun 2021 - Aug 2021

- Developed machine learning code in Python for analyzing CCTV footage and detecting the presence of weapons, with primary utilization intended for school neighborhoods.