

# CryptoVol

**Overview:** CryptoVol is a cryptocurrency volatility prediction tool designed to help traders, analysts, and researchers assess market risks by forecasting price volatility of digital assets.

**Purpose:** The primary purpose of CryptoVol is to provide accurate, data-driven predictions of cryptocurrency volatility to support informed trading and investment decisions.

## Core Features:

- Real-time cryptocurrency price data collection
- Volatility forecasting using statistical models and machine learning
- Interactive charts and visualizations
- Customizable date ranges and asset selection
- Exportable volatility reports

**Tech Stack:** Python, Pandas, NumPy, Matplotlib, Scikit-learn, API integration with cryptocurrency data providers

## System Requirements:

- Operating System: Windows 10 or later / Linux / macOS
- Processor: Intel i5 or equivalent
- RAM: Minimum 8 GB
- Python 3.9 or later
- Internet connection for real-time data fetching

## Workflow:

1. Fetch market data from cryptocurrency APIs
2. Process and clean data for analysis
3. Apply statistical and machine learning models to forecast volatility
4. Visualize predictions in charts
5. Export volatility reports for stakeholders

## Potential Use Cases:

- Day traders making short-term decisions
- Portfolio managers assessing risk exposure
- Researchers analyzing market trends

## Future Enhancements:

- Integration with more exchanges
- Support for automated trading bots
- Enhanced deep learning prediction models