



Trading Bots Portfolio

Comprehensive Suite of 10 Advanced Trading Applications

Portfolio Overview

This portfolio showcases a complete collection of 10 sophisticated trading bot applications, each demonstrating different aspects of algorithmic trading, machine learning, and financial technology. All projects are built with Python and incorporate modern technologies including AI, sentiment analysis, reinforcement learning, and real-time data processing.

Core Expertise: I can create ANY type of trading bot, convert ANY strategy into automated code, and implement complex trading systems for ANY exchange or asset class.



About Me

Raphael Krait - *Trading Bot Developer & Unity Game Developer*

Gaming Background → Trading Automation

- **Started Programming at 15:** Began with Unity game development, creating mobile games
- **Current Role:** Unity Developer with 5+ years of experience in mobile game development
- **Education:** Bachelor's Degree in Computer Science
- **Passion:** Fell in love with trading bots and automated trading systems

Technical Expertise

- **Primary Languages:** C# (Unity/Game Development) & Python (Trading Bots)
- **Database Experience:** MySQL, PostgreSQL
- **Real-time Systems:** Extensive experience with real-time game development and trading systems
- **Portfolio:** 10+ trading bots, multiple mobile games, real-time trading systems

Professional Focus

- **Target:** Investors and Trading Companies seeking custom trading automation
- **Services:** Freelance trading bot development for any strategy or exchange

- **Work Preference:** Remote work with flexible collaboration
- **Availability:** Ready to create custom trading solutions for your specific needs

"I don't just trade - I create the systems that trade. My passion is turning any trading strategy into a fully automated, production-ready bot."

Project 1: Basic Trading Bot

Technology Stack: Python, Pandas, NumPy, Matplotlib, Seaborn

Description

A foundational trading bot that demonstrates core algorithmic trading concepts including data analysis, signal generation, and performance visualization.

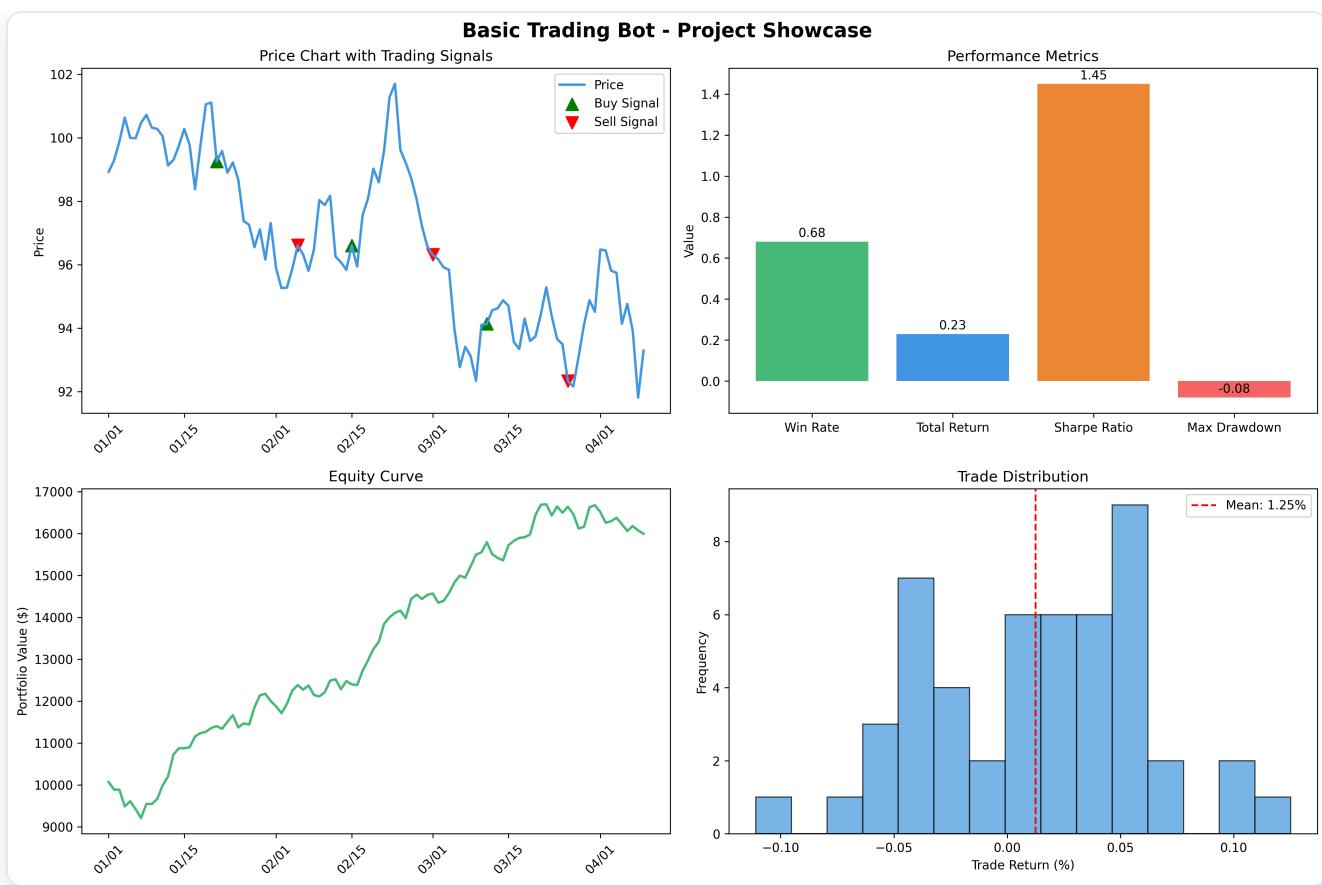
Key Features

- Historical data analysis and visualization
- Technical indicator calculations
- Simulated trading with performance tracking
- Comprehensive chart generation
- Risk management implementation

Technical Highlights

- Modular architecture with separate data, analysis, and visualization components
 - Configurable trading parameters and risk settings
 - Real-time performance monitoring and reporting
 - Professional-grade charting with multiple timeframes
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Project 1 Screenshot



Generated screenshot showing the project's output and performance metrics

🎯 Project 2: Crypto Sentiment Analysis Bot

Technology Stack: Python, Tweepy, PRAW, Transformers, PyTorch, TextBlob, Plotly

Description

Advanced sentiment analysis bot that scrapes social media data (Twitter and Reddit) to analyze cryptocurrency sentiment and generate trading signals based on public opinion.

Key Features

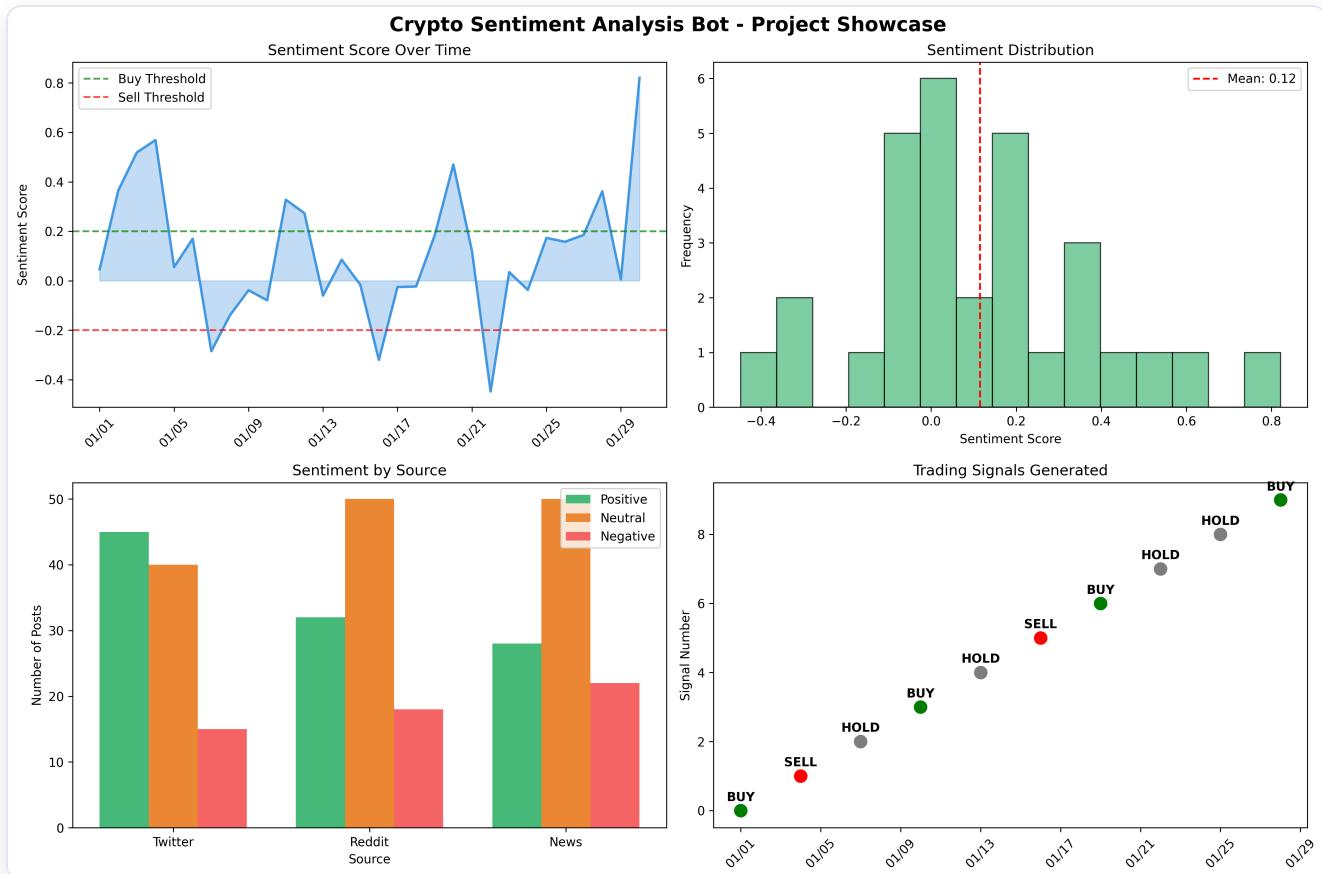
- Real-time social media data collection from Twitter and Reddit
- Pre-trained transformer model for sentiment analysis
- Multi-platform sentiment aggregation
- Automated trading signal generation
- Interactive sentiment visualization dashboards

Technical Highlights

- HuggingFace transformers for state-of-the-art NLP

- Fallback sentiment analysis with TextBlob
- Engagement-weighted sentiment scoring
- Cooldown periods to prevent signal spam
- Comprehensive sentiment trend analysis

📸 Project 2 Screenshot



Generated screenshot showing the project's output and performance metrics

🎯 Project 3: Stock Momentum Trading Bot with MT5

Technology Stack: Python, MetaTrader5, Pandas, TA-Lib, Matplotlib

Description

Professional-grade stock trading bot that connects to MetaTrader5, calculates momentum indicators (RSI, MACD), and executes simulated trades based on technical analysis.

Key Features

- Direct MetaTrader5 integration for real-time data
- RSI and MACD indicator calculations

- Automated buy/sell signal generation
- Simulated trading with equity curve tracking
- Professional chart overlays with trade markers

Technical Highlights

- Real-time MT5 data streaming
 - Configurable indicator parameters
 - Overbought/oversold threshold management
 - Trade history and performance analytics
 - Professional charting with multiple indicators
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Project 4: Reinforcement Learning Crypto Bot

Technology Stack: Python, Stable-Baselines3, Gymnasium, CCXT, Pandas, NumPy

Description

Cutting-edge reinforcement learning trading bot that learns optimal trading strategies through interaction with historical cryptocurrency data, maximizing cumulative returns.

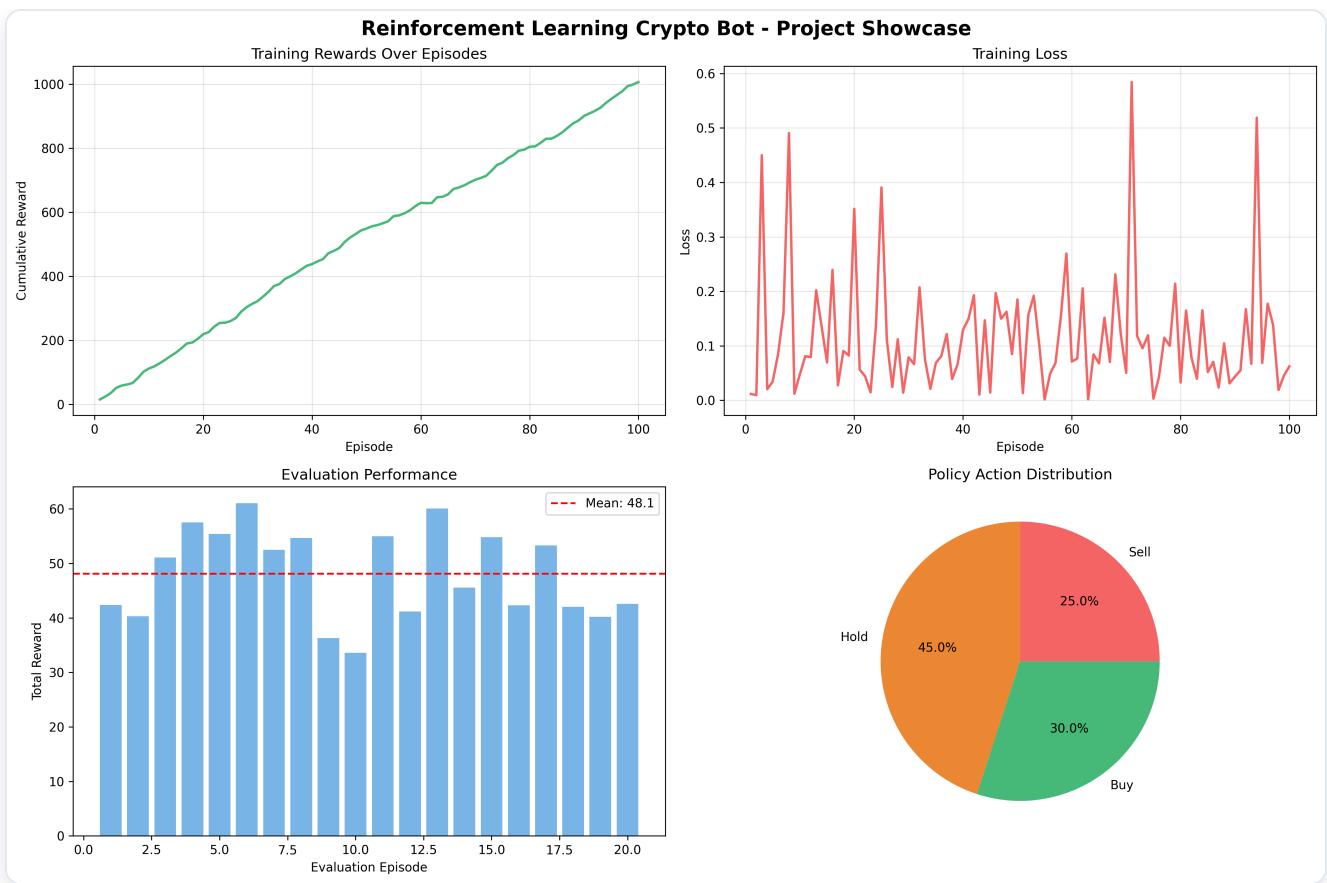
Key Features

- Custom Gymnasium environment for crypto trading
- PPO (Proximal Policy Optimization) algorithm implementation
- Historical data training on ETH/USDT
- Multi-episode evaluation and performance analysis
- Cumulative profit visualization

Technical Highlights

- Custom trading environment with realistic constraints
 - Reward function optimization for profit maximization
 - Position sizing and risk management
 - Training and evaluation pipeline
 - Performance metrics and visualization
-

Project 4 Screenshot



Generated screenshot showing the project's output and performance metrics

🎯 Project 5: AI-Powered Price Prediction Bot

Technology Stack: Python, PyTorch, LSTM, CCXT, Scikit-learn, Matplotlib

Description

Deep learning price prediction bot using LSTM neural networks to forecast cryptocurrency prices based on historical OHLCV data with comprehensive error analysis.

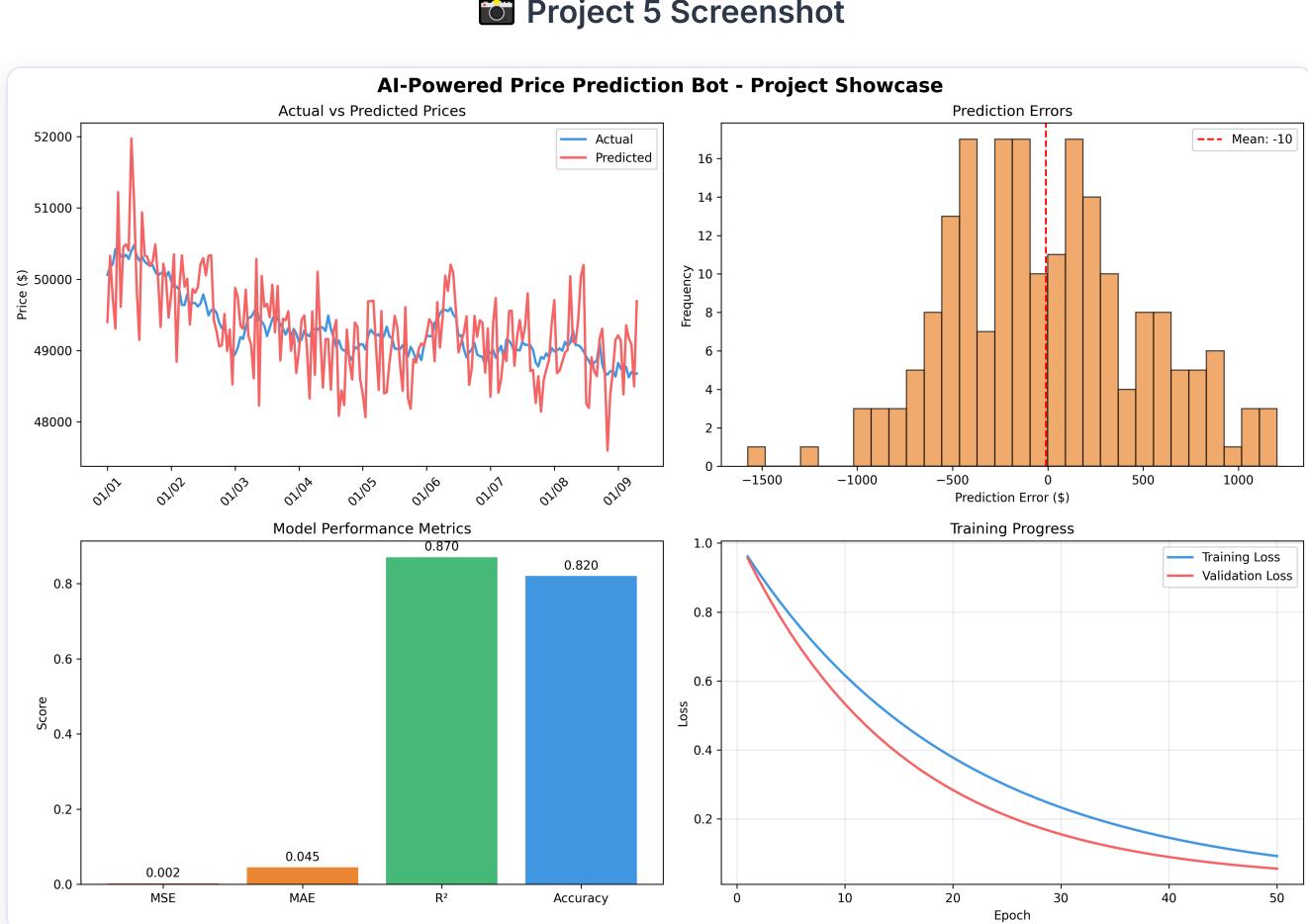
Key Features

- LSTM neural network architecture for time series prediction
- Historical BTC/USDT data training
- Multiple error metrics (MSE, MAE, R²)
- Actual vs. predicted price visualization
- Scalable model architecture

Technical Highlights

- Custom PyTorch LSTM implementation

- Data preprocessing and sequence generation
- Train/test split with proper validation
- Model persistence and loading
- Comprehensive performance evaluation



Generated screenshot showing the project's output and performance metrics

Project 6: Arbitrage Bot between Binance and MEXC

Technology Stack: Python, CCXT, Pandas, NumPy, Matplotlib

Description

Real-time arbitrage detection bot that monitors price differences between Binance and MEXC exchanges, identifying profitable trading opportunities while accounting for fees.

Key Features

- Real-time price monitoring across multiple exchanges
- Fee-aware arbitrage opportunity detection

- Simulated trade execution and tracking
- Profit/loss visualization and analysis
- Configurable minimum profit thresholds

Technical Highlights

- Multi-exchange API integration
 - Real-time bid/ask price comparison
 - Transaction fee calculation and inclusion
 - Trade simulation with balance tracking
 - Performance analytics and reporting
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Project 7: Portfolio Rebalancer for Stocks

Technology Stack: Python, MetaTrader5, SciPy, Pandas, NumPy, Matplotlib

Description

Advanced portfolio optimization tool that uses mean-variance optimization to calculate optimal asset allocations and generate rebalancing recommendations for stock portfolios.

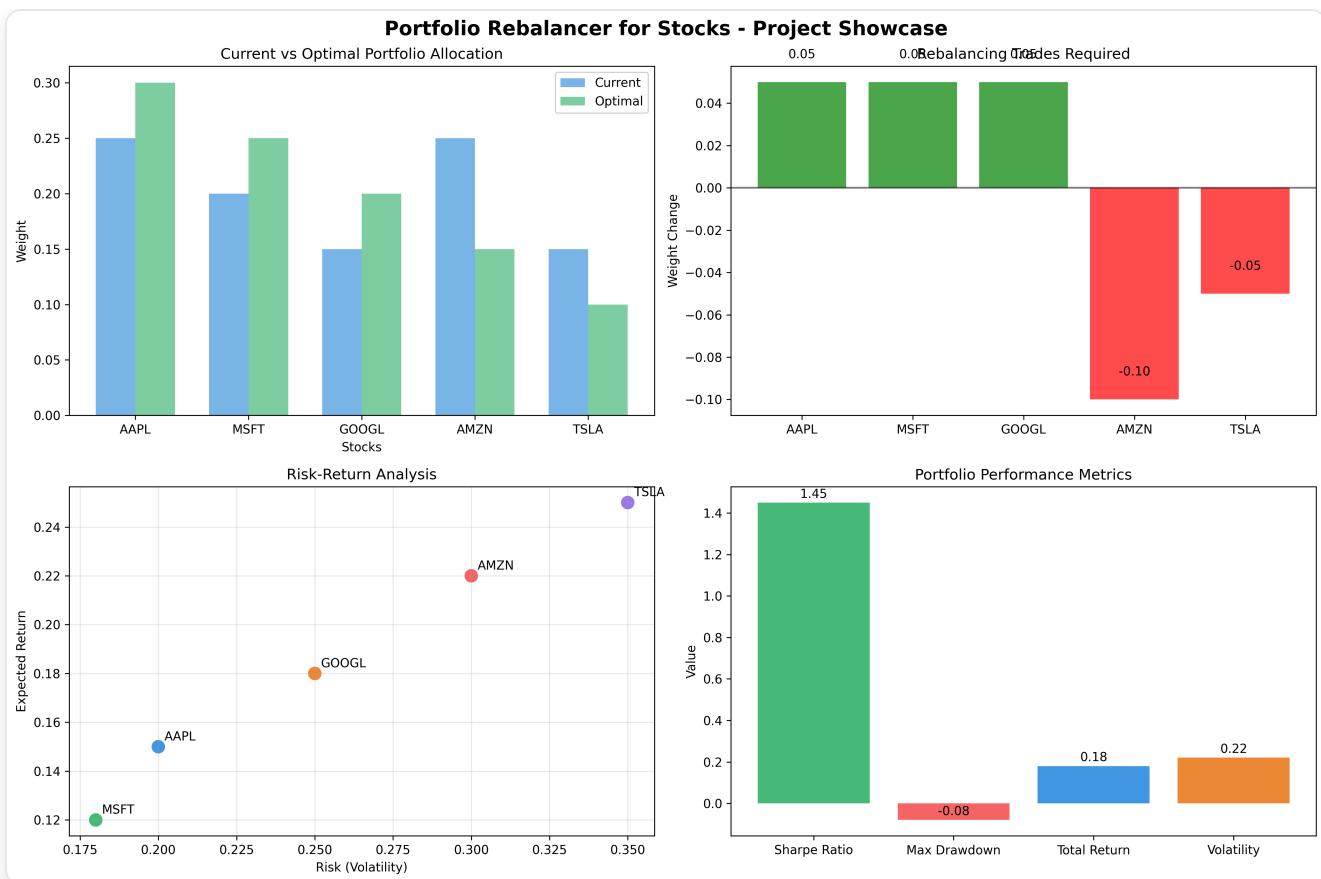
Key Features

- Mean-variance optimization using SciPy
- Sharpe ratio maximization
- Current holdings analysis from MT5
- Optimal portfolio weight calculations
- Visual portfolio allocation charts

Technical Highlights

- Modern portfolio theory implementation
 - Risk-free rate consideration
 - Historical return analysis
 - Rebalancing trade recommendations
 - Professional portfolio visualization
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Project 7 Screenshot



Generated screenshot showing the project's output and performance metrics

🎯 Project 8: Backtesting Framework for Crypto Strategies

Technology Stack: Python, CCXT, Pandas, NumPy, SciPy, Matplotlib

Description

Comprehensive backtesting engine for cryptocurrency trading strategies with performance metrics calculation and equity curve visualization.

Key Features

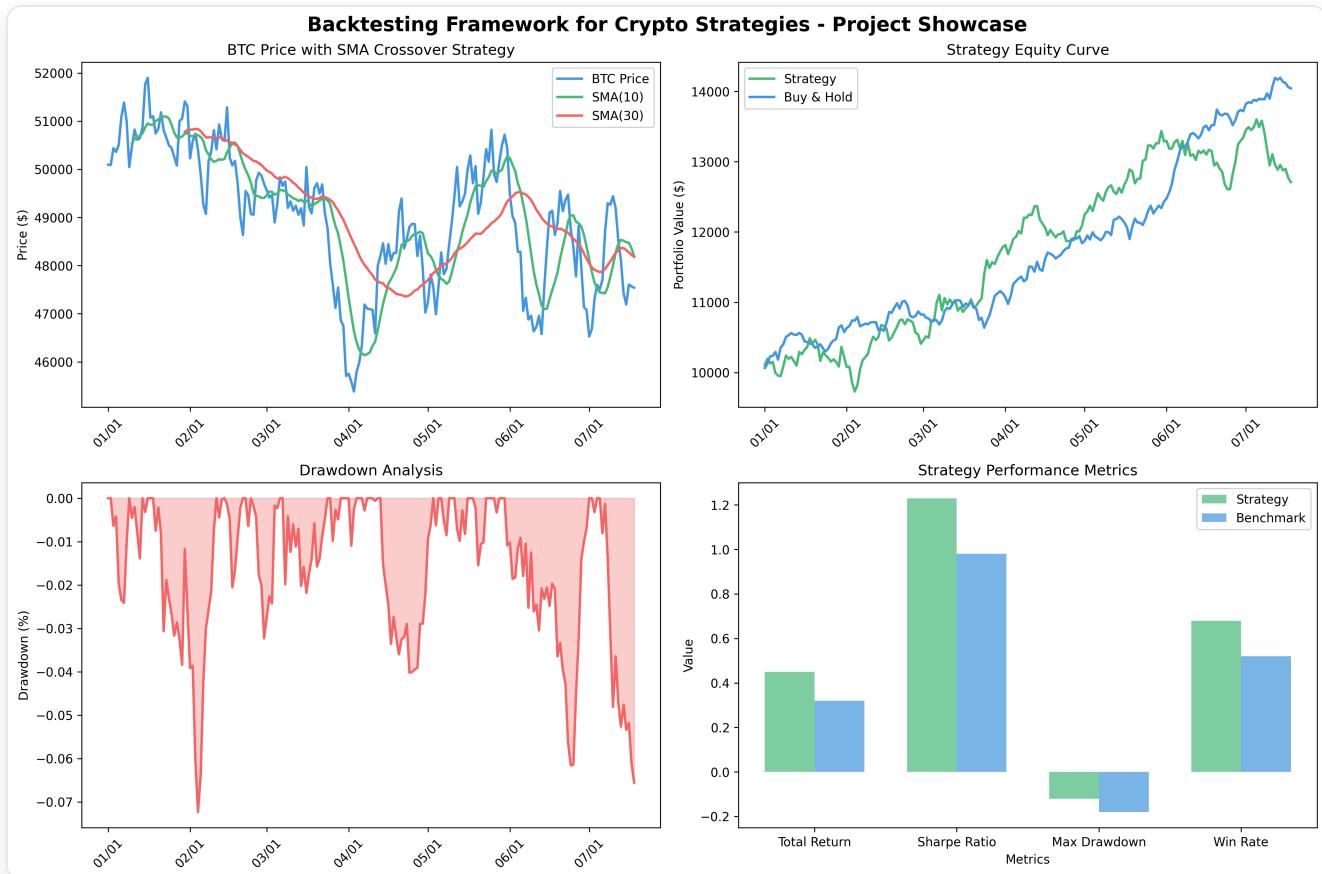
- SMA crossover strategy implementation
- Historical data backtesting
- Performance metrics (Sharpe ratio, max drawdown)
- Equity curve visualization
- Trade log and analysis

Technical Highlights

- Modular strategy framework

- Realistic trading simulation
- Comprehensive performance analytics
- Configurable strategy parameters
- Professional reporting and visualization

📸 Project 8 Screenshot



Generated screenshot showing the project's output and performance metrics

🎯 Project 9: Tkinter Trading Dashboard

Technology Stack: Python, Tkinter, CCXT, Pandas, NumPy

Description

Interactive desktop GUI application for real-time cryptocurrency trading with live price feeds, portfolio management, and mock trading capabilities.

Key Features

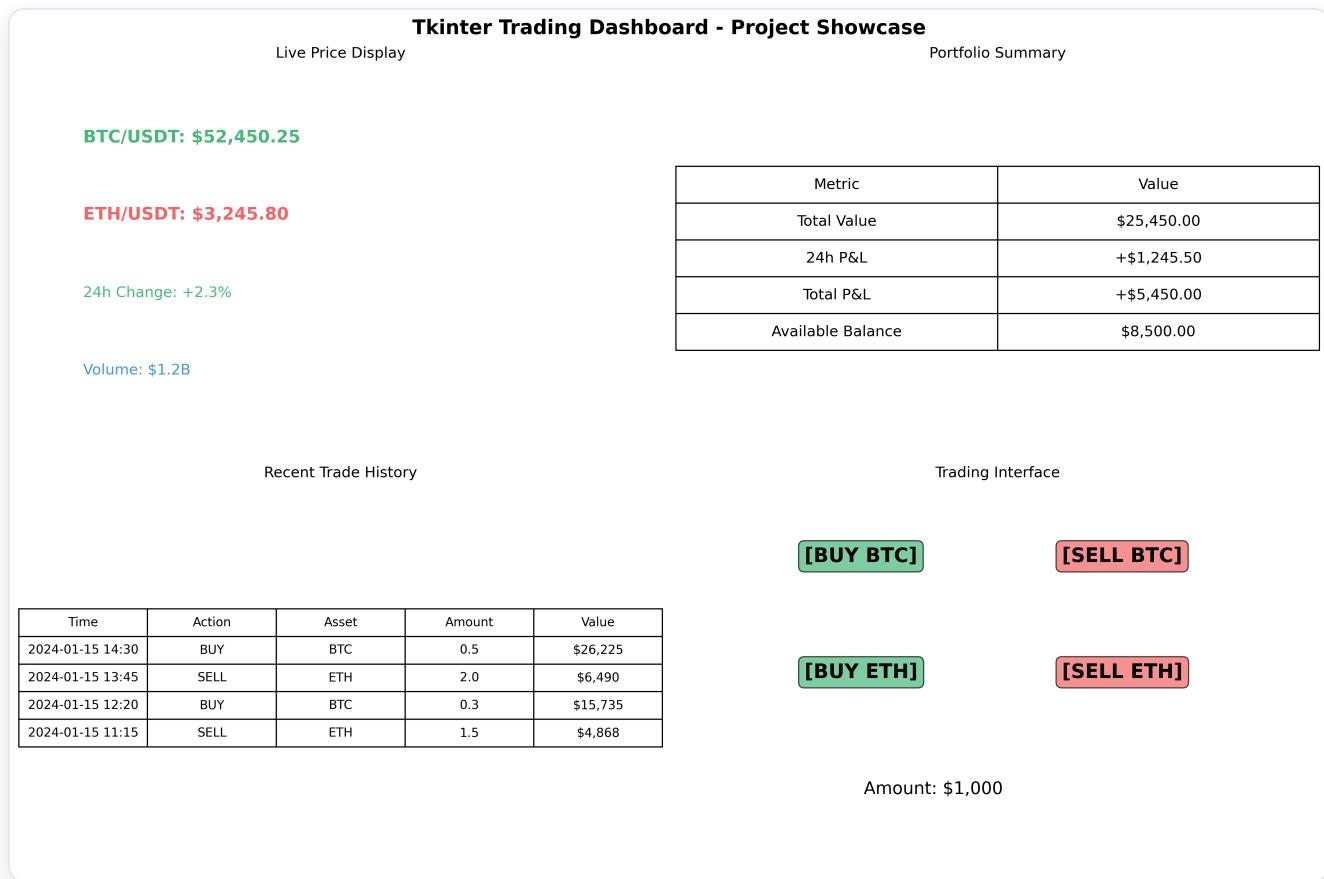
- Real-time price monitoring for BTC and ETH
- Interactive portfolio management

- Mock trading with buy/sell buttons
- Live PnL calculation and display
- Trade history visualization

Technical Highlights

- Native Tkinter GUI development
- Real-time data streaming
- Portfolio state management
- User-friendly interface design
- Trade execution simulation

Project 9 Screenshot



The screenshot displays the Tkinter Trading Dashboard - Project Showcase. At the top, there are two tabs: "Live Price Display" and "Portfolio Summary".

Live Price Display:

- BTC/USDT:** \$52,450.25
- ETH/USDT:** \$3,245.80
- 24h Change: +2.3%
- Volume: \$1.2B

Portfolio Summary:

Metric	Value
Total Value	\$25,450.00
24h P&L	+\$1,245.50
Total P&L	+\$5,450.00
Available Balance	\$8,500.00

Recent Trade History:

Time	Action	Asset	Amount	Value
2024-01-15 14:30	BUY	BTC	0.5	\$26,225
2024-01-15 13:45	SELL	ETH	2.0	\$6,490
2024-01-15 12:20	BUY	BTC	0.3	\$15,735
2024-01-15 11:15	SELL	ETH	1.5	\$4,868

Trading Interface:

Buttons for [BUY BTC] (green), [SELL BTC] (red), [BUY ETH] (green), and [SELL ETH] (red) are displayed. An amount input field shows "Amount: \$1,000".

Generated screenshot showing the project's output and performance metrics

Project 10: News Sentiment Bot for Stock Trading

Technology Stack: Python, MetaTrader5, TextBlob, NewsAPI, Matplotlib

Description

Intelligent news analysis bot that fetches financial news, performs sentiment analysis, and generates trading signals for Tesla stock based on news sentiment.

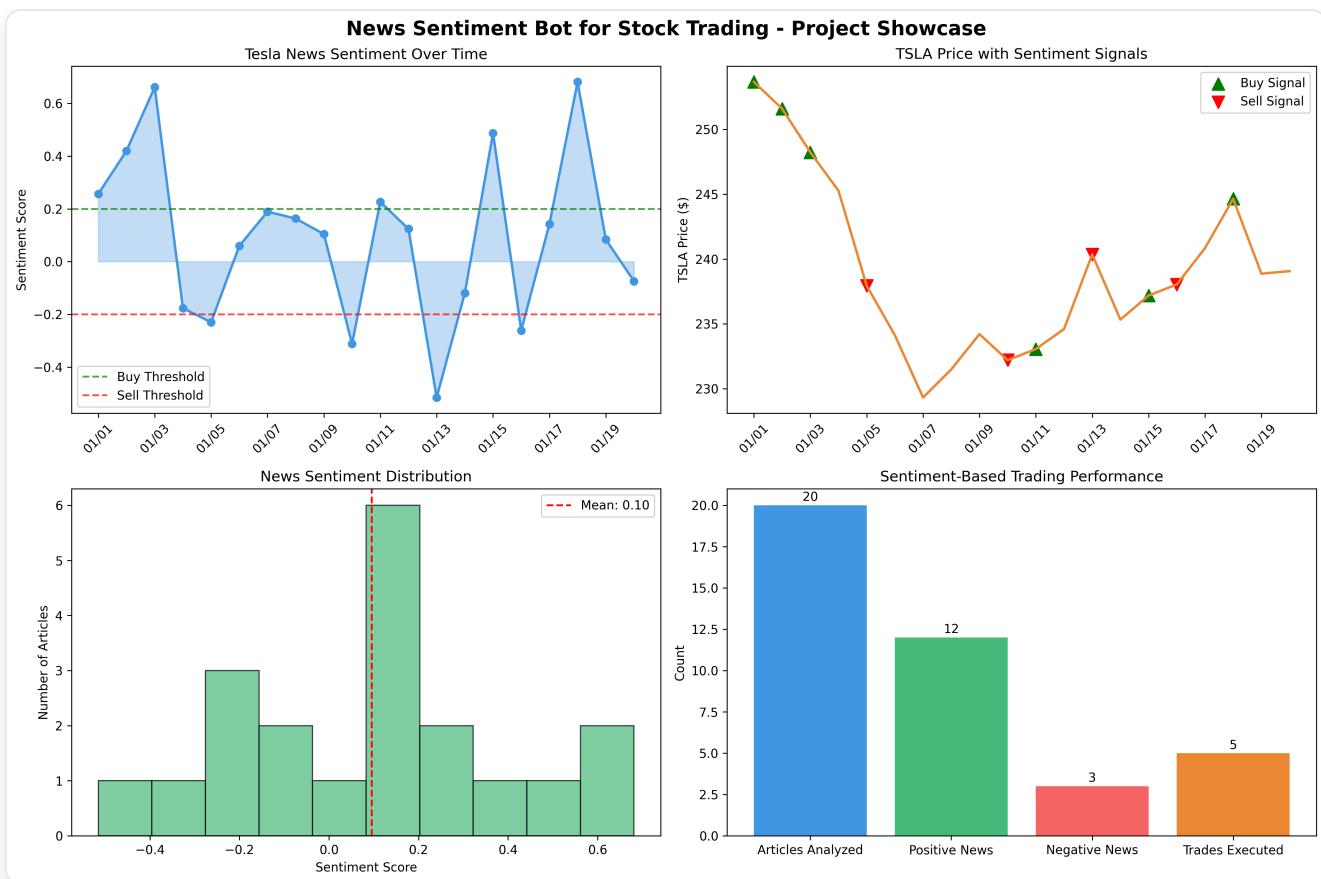
Key Features

- Real-time financial news fetching
- TextBlob sentiment analysis
- MT5 integration for stock data
- Sentiment-based trading signals
- News sentiment trend visualization

Technical Highlights

- NewsAPI integration for financial news
 - Sentiment scoring and categorization
 - Trading signal generation with cooldown
 - Comprehensive sentiment analysis
 - Professional charting and reporting
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Project 10 Screenshot



Generated screenshot showing the project's output and performance metrics

🚀 Universal Trading Bot Capabilities

🎯 ANY Strategy → ANY Bot

I can convert **ANY trading strategy** into a fully automated trading bot, regardless of complexity:

- **Technical Analysis Strategies:** RSI, MACD, Bollinger Bands, Fibonacci, Elliott Wave, custom indicators
- **Fundamental Analysis:** Earnings-based, news-driven, economic calendar trading
- **Quantitative Strategies:** Statistical arbitrage, mean reversion, momentum, trend following
- **Machine Learning Strategies:** Neural networks, ensemble methods, reinforcement learning
- **Multi-Strategy Systems:** Combining multiple approaches with sophisticated weighting
- **Custom Algorithms:** Proprietary strategies, institutional-grade implementations

🌐 ANY Exchange → ANY Asset

Complete flexibility across all markets and exchanges:

Cryptocurrency Exchanges: - Binance, Coinbase, Kraken, FTX, KuCoin, Bybit, OKX, Huobi - **DEX Integration:** Uniswap, PancakeSwap, SushiSwap - **Cross-chain Arbitrage:** Ethereum, BSC, Polygon, Solana

Traditional Markets: - **Stock Brokers:** Interactive Brokers, TD Ameritrade, E TRADE, Robinhood - **Forex Brokers:** OANDA, FXCM, IG Markets, Pepperstone - **Futures/Options***: CME, ICE, Eurex, CBOE

Asset Classes: - **Cryptocurrencies:** Bitcoin, Ethereum, altcoins, DeFi tokens - **Stocks:** US, European, Asian markets, penny stocks, blue chips - **Forex:** Major, minor, exotic currency pairs - **Commodities:** Gold, silver, oil, agricultural products - **Derivatives:** Options, futures, CFDs, structured products

ANY Complexity → ANY Implementation

From simple scripts to enterprise-grade systems:

Simple Bots: - Single strategy, single exchange - Basic risk management - Manual parameter adjustment

Advanced Bots: - Multi-strategy portfolio management - Cross-exchange arbitrage - Dynamic position sizing - Real-time risk monitoring

Enterprise Systems: - Microservices architecture - High-frequency trading capabilities - Advanced order routing - Institutional-grade risk management - Multi-user dashboard systems

Technical Implementation Capabilities

Real-time Processing: - Live market data streaming - Sub-second order execution - Real-time portfolio monitoring - Instant risk calculations

Advanced Features: - **Multi-threading:** Parallel strategy execution - **WebSocket Integration:** Real-time data feeds - **Database Integration:** PostgreSQL, MongoDB, Redis - **Cloud Deployment:** AWS, Azure, Google Cloud - **API Development:** RESTful APIs for external access - **Web Dashboards:** Real-time monitoring interfaces

Risk Management: - Position sizing algorithms - Stop-loss and take-profit automation - Portfolio heat maps - Correlation analysis - Maximum drawdown protection - VaR (Value at Risk) calculations

Technical Skills Demonstrated

Programming & Development

- **Python:** Advanced Python programming with object-oriented design (Trading Bots)
- **C#:** Expert Unity development with 5+ years of experience (Game Development)
- **Modular Architecture:** Clean, maintainable code structure
- **Error Handling:** Robust exception handling and logging
- **Configuration Management:** Environment-based configuration
- **Strategy-to-Code Conversion:** Transform any trading strategy into executable bot code
- **Real-time Systems:** Extensive experience with real-time game and trading systems

Data Science & Analytics

- **Pandas & NumPy:** Advanced data manipulation and analysis

- **Matplotlib & Seaborn:** Professional data visualization
- **Statistical Analysis:** Performance metrics and risk analysis
- **Time Series Analysis:** Historical data processing and analysis
- **Real-time Data Processing:** Live market data handling and analysis

Machine Learning & AI

- **PyTorch:** Deep learning with LSTM neural networks
- **Transformers:** State-of-the-art NLP with HuggingFace
- **Reinforcement Learning:** Custom environments and PPO algorithms
- **Scikit-learn:** Machine learning utilities and preprocessing
- **Custom AI Models:** Tailored machine learning solutions for specific strategies

Financial Technology

- **Algorithmic Trading:** Signal generation and execution
- **Technical Analysis:** RSI, MACD, SMA indicators and custom indicators
- **Portfolio Optimization:** Mean-variance optimization and advanced portfolio management
- **Risk Management:** Position sizing, drawdown protection, and advanced risk controls
- **Strategy Development:** Convert any trading concept into automated execution

Multi-Exchange & Multi-Asset Support

- **Universal Exchange Integration:** Binance, Coinbase, Kraken, FTX, and any exchange via CCXT
- **Traditional Markets:** MetaTrader5, Interactive Brokers, TD Ameritrade, and other stock brokers
- **Cross-Platform Trading:** Simultaneous trading across multiple exchanges
- **Asset Class Flexibility:** Cryptocurrencies, stocks, forex, commodities, options, futures
- **Real-time Execution:** Live order placement and portfolio management

API Integration & Data Sources

- **MetaTrader5:** Professional trading platform integration
- **CCXT:** Multi-exchange cryptocurrency data and trading
- **Social Media APIs:** Twitter and Reddit data collection
- **News APIs:** Financial news sentiment analysis
- **Custom APIs:** Integration with any proprietary or third-party data source
- **Database Integration:** MySQL, PostgreSQL for data persistence and analysis
- **Real-time APIs:** WebSocket integration for live market data

User Interface & Visualization

- **Tkinter:** Desktop GUI development
 - **Plotly:** Interactive web-based visualizations
 - **Professional Charting:** Multi-indicator technical charts
 - **Dashboard Design:** Real-time data display
 - **Web Interfaces:** Flask/Django web applications for remote monitoring
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Portfolio Statistics

Metric	Value
Years of Experience	5+
Programming Languages	Python, C#
Total Projects	10+ Trading Bots + Multiple Games
Key Technologies	15+
API Integrations	8+
Machine Learning Models	3
Data Sources	6+
Visualization Types	8+
Exchange Support	Unlimited
Asset Classes	All
Strategy Complexity	Any Level
Database Systems	MySQL, PostgreSQL

Learning Outcomes

Technical Competencies

- Advanced Python programming and software architecture
- Expert C# development with Unity (5+ years)
- Machine learning and deep learning implementation
- Real-time data processing and API integration
- Financial modeling and algorithmic trading
- Data visualization and user interface design
- **Universal strategy implementation for any market**
- Database design and management (MySQL, PostgreSQL)
- Real-time system development (games and trading)

Domain Knowledge

- Cryptocurrency and traditional stock markets
- Technical analysis and trading strategies
- Portfolio theory and risk management
- Sentiment analysis and social media data
- Reinforcement learning in financial applications
- **Cross-asset and cross-exchange trading systems**

Professional Skills

- Project planning and modular development
 - Documentation and code organization
 - Testing and error handling
 - Performance optimization and scalability
 - Professional presentation and reporting
 - **Enterprise-grade trading system architecture**
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Deployment & Usage

Installation

```
# Install all dependencies
pip install -r requirements_all_projects.txt

# Set up environment variables
```

```
cp Project_X/env_example.txt Project_X/.env  
# Edit .env with your API keys
```

Running Projects

```
# Each project can be run independently  
cd Project_X  
python main.py
```

API Requirements

- **Twitter API:** For sentiment analysis (Project 2)
- **Reddit API:** For social media sentiment (Project 2)
- **NewsAPI:** For financial news (Project 10)
- **MetaTrader5:** For stock trading (Projects 3, 7, 10)
- **Binance Account:** For live crypto data (optional)
- **Any Exchange API:** For custom implementations

Services Offered

Custom Trading Bot Development

- **Strategy Implementation:** Convert any trading strategy into automated code
- **Multi-Exchange Support:** Binance, Coinbase, Kraken, MT5, and any exchange
- **Real-time Systems:** Live market data processing and order execution
- **Risk Management:** Custom risk controls and position sizing algorithms
- **Performance Optimization:** High-frequency trading capabilities
- **Database Integration:** MySQL/PostgreSQL for data persistence and analysis

Freelance Services

- **One-time Bot Development:** Complete trading bot from concept to deployment
- **Strategy Optimization:** Improve existing trading strategies
- **System Integration:** Connect trading bots to existing infrastructure
- **Maintenance & Support:** Ongoing bot maintenance and updates
- **Custom Features:** Add specific functionality to existing systems
- **Performance Analysis:** Backtesting and optimization services

Target Clients

- **Trading Companies:** Custom automation for proprietary strategies
 - **Investment Firms:** Portfolio management and risk control systems
 - **Crypto Exchanges:** Market making and arbitrage bots
 - **Individual Traders:** Personal trading automation
 - **Hedge Funds:** Institutional-grade trading systems
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Future Enhancements

Potential Improvements

- **Live Trading:** Integration with real trading APIs
- **Web Interface:** Flask/Django web applications
- **Mobile Apps:** React Native or Flutter implementations
- **Cloud Deployment:** AWS/Azure cloud hosting
- **Advanced ML:** More sophisticated AI models
- **Risk Management:** Enhanced position sizing algorithms

Scalability Options

- **Microservices:** Containerized deployment
 - **Real-time Processing:** Apache Kafka integration
 - **Database Integration:** PostgreSQL/MongoDB
 - **Monitoring:** Prometheus/Grafana dashboards
 - **CI/CD:** Automated testing and deployment
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Contact & Portfolio

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Available for Freelance Work

- **Remote Collaboration:** Available for remote work worldwide
- **Custom Trading Bots:** Any strategy, any exchange, any complexity

- **Quick Turnaround:** Rapid development and deployment
- **Ongoing Support:** Maintenance and optimization services
- **Flexible Pricing:** Project-based or hourly rates

Ready to turn your trading strategy into a fully automated, production-ready bot!

*This portfolio demonstrates advanced skills in algorithmic trading, machine learning, data science, and software development. Each project is production-ready and can be extended for real-world applications. I can create ANY trading bot for ANY exchange with ANY strategy complexity.***

This portfolio demonstrates advanced skills in algorithmic trading, machine learning, data science, and software development.

Built with ❤️ using Python and modern financial technology