Dear Candidate,

Thank you for your interest in the Algo Trading Internship at **JarNox**.
Due to the large number of applications, we are prioritizing candidates who can **demonstrate hands-on trading system skills**. To fast-track your application, please complete the assignment below.

⚡ **Assignment Task:**

Build a Live Trading Simulation / Algo Trading System Prototype

Core Requirements:

1. **Data Feeds**
   - Use live or delayed stock/crypto data (e.g., yfinance, NSE/BSE APIs, Alpaca, Binance, or mock websocket feed).
   - Must handle both **historical** and **live (streaming/pseudo-streaming)** data.
2. **Strategy Implementation**
   - Implement at least **two simple trading strategies**, such as:
     - Moving Average Crossover (SMA/EMA).
     - RSI-based momentum strategy.
     - Mean Reversion (Bollinger Bands).
   - Show **buy/sell signals** on charts.
3. **Backtesting & Paper Trading**
   - Backtest strategies on historical data.
   - Simulate trades (paper trading) with PnL tracking (profit, loss, equity curve).
4. **Dashboard / Visualization**
   - Display:
     - Live price chart with strategy signals (buy/sell markers).
     - Running portfolio performance (PnL, trades, exposure).
   - Tech stack: HTML/JS/React (frontend) + FastAPI/Flask (backend).
5. **Database (Optional but Preferred)**

    - Store executed trades and portfolio logs in PostgreSQL/SQLite.

🎯 Bonus Features (Optional, Extra Points)

- Connect to a **real paper trading API** (e.g., Alpaca, Zerodha Kite Connect, Binance Testnet).
- Add **risk management rules** (stop loss, max drawdown).
- Implement **websockets** for live data updates.
- Deploy on **Docker + free cloud service (Railway/Render/Vercel/Oracle VM)**.
- Add **AI/ML price prediction** (basic LSTM or regression model).

📦 Deliverables

- GitHub repo containing:
    - Source code (backend + frontend if used).
    - Sample dataset / API integration code.
    - Backtest results (charts, logs, or screenshots).
    - Short note (200–300 words) covering:
        - Your development approach
        - Technologies used
        - Challenges & learnings

✅ Evaluation Criteria

- Quality of code & documentation
- Correctness of strategy logic & backtesting
- Creativity in dashboard / visualization
- Handling of live data feeds
- Bonus features (risk management, ML, deployment)

✨ **Why This Is Worth Doing**

Even if not selected:

- You'll build a **real-world Algo Trading prototype** for your portfolio.
- Gain hands-on skills in **trading APIs, strategies, risk management**.
- Strengthen your profile for **fintech & quant roles**.

📨 Please submit your work to:
shaktijarnox@outlook.com

Best regards,
Team JarNox