Summer 2022 Internship

DeFi Robo Advisor

Project Description: We'll explore using investment analysis methods, such as post-modern portfolio theory, to assemble a portfolio of DeFi protocols across sectors (e.g., lending, dexes, derivatives, payments, and assets). Instead of just relying on price variance to model risk, we'll incorporate other factors, such as protocol fundamentals, including its smart contract security, time since launch, and whether the price looks overextended. We'll automate this analysis and use it as part of a simple web app that offers the user a portfolio based on answers to a small number of simple investment questions (e.g., risk appetite, term).

Project Type: Research and Engineering.

Duties/Activities:

- Use different APIs to collect data about DeFi protocols, such as their security, price, social sentiment, and project fundamentals.
- Investigate different investment analysis methods for DeFi portfolio management across sectors, such as lending, dexes, derivatives, payments, and other assets like NFTs.
- Develop a backend DeFi portfolio management service using the best investment method with periodic rebalancing to optimize for yield.
- Develop a backend to expose the portfolio management service through a RESTful API.
- Develop a frontend to provide personalized DeFi financial advice based on answers to a number of investment questions through a bot-like interface.

Required Skills:

- Statistical analysis and machine learning in Python (pandas, numpy, scipy, scikit-learn).
- Full-stack web app development in JavaScript (react, redux, nodejs, express, mongodb).
- Interest in decentralized finance and financial technology.

Preferred Intern Academic Level: Senior undergraduate.

Learning Opportunities:

- Finance: Portfolio management and investment analysis.
- Web: Web3/DeFi protocols, microservices, and full-stack web app development.
- R&D: Statistical analysis, machine learning, and program static analysis (security).

Expected Team Size: 1–3

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