

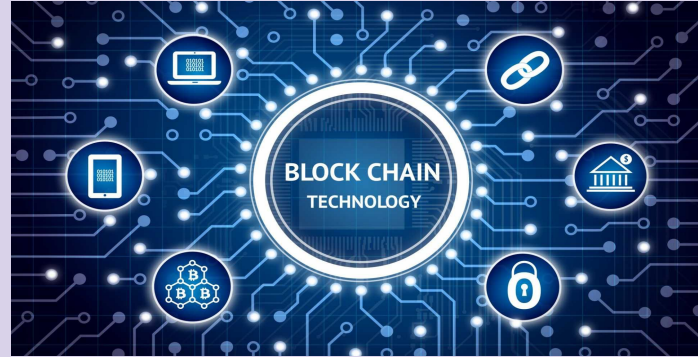
# *Ether Hire*

## “Fueling Your Fintech Team”

Kevin Pasricha

# Executive Summary

Ether Hire aims to revolutionize the process of hiring and compensating freelance employees using blockchain technology. The project features a streamlined interface, allowing customers to evaluate potential hires based on their Ethereum-based ratings and hourly rates. Ether Hire fetches real-time Ether prices and integrates wallet functionality for secure payments through Ganache. Security and transparency are the key components of Ether Hire.



# Concept

By leveraging the Ethereum blockchain, we provide a transparent and secure ecosystem for connecting employers with candidates seeking work.

## Motivation and User Story

- The traditional hiring processes and payment transactions for freelancers typically require the help of a “middle-man”.
- Delays and security breaches are also common within this realm.
- Ether Hire addresses these pain points by integrating blockchain, offering utmost security and trust.

*“Imagine being an employer looking to hire someone, but you are worried about inputting information online that may lead to hackers sabotaging your personal information. Fear no more! With our platform, filtering candidates by review and rates can be done easily and efficiently”*

- *Use Ether Hire’s built in sliders to filter among candidates*
- *Be able to visualize all candidates in our database, or select candidates based on your search preferences*

# Data Techniques

Data Source: **Streamlit**, assessed using “import streamlit as st” and **Web3**, assessed using “from Web3 import Web3”

Ether Hire sources directly from the *candidate\_database* dictionary within our main code. It includes crucial information about candidates, including names, images, and Ethereum addresses.

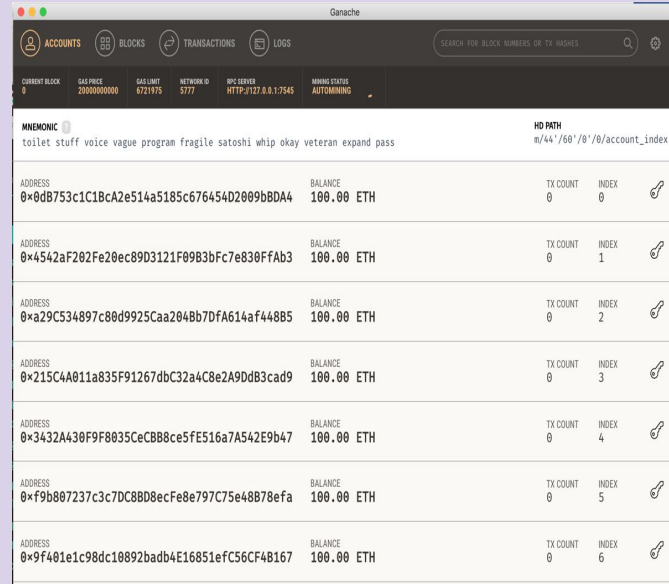
## Reasoning for Data Selection (Streamlit):

- Provides seamless website and database access
- Portrays clear images, and easily accessible sliders for filters and customer ease-of-use
- Effectively works with blockchain and Ganache to show transaction history

## Data Collection and Exploration:

Exploration: Importing candidate images and Ethereum addresses, utilizing pandas dataframes to organize data, and identifying patterns

Collection: removing duplicates, ensuring consistency for precise analysis and data reading, integrating crypto\_wallet.py Python script into the Ether Hire interface program found in ether\_hire.py



The screenshot shows the Ganache application window. At the top, there are tabs for ACCOUNTS, BLOCKS, TRANSACTIONS, and LOGS. Below the tabs, there is a search bar and a table of accounts. The table has columns for ADDRESS, BALANCE, TX COUNT, and INDEX. The accounts are listed with their respective addresses and balances, all showing a balance of 100.00 ETH. The TX COUNT and INDEX columns are also visible.

ADDRESS	BALANCE	TX COUNT	INDEX
0x0b753c1C1BcA2e514a5185c676454D2009bBDA4	100.00 ETH	0	0
0x4542aF202Fe20ec89D3121F09B3bFc7e830FfAb3	100.00 ETH	0	1
0xa29C534897c88d9925Caa204Bb7DfA614af448B5	100.00 ETH	0	2
0x215C4A011a835F91267dbC32a4C8e2A9Dd83cad9	100.00 ETH	0	3
0x3432A430F9F8035CeCBB8ce5fE516a7A542E9b47	100.00 ETH	0	4
0xF9b807237c3c7DC8BD8ecFe8e797C75e48B78efa	100.00 ETH	0	5
0x9f401e1c98dc10892badb4E16851efC56CF4B167	100.00 ETH	0	6

Figure 1: Sample blockchain transactions in Ganache

# Approach

## Challenges:

- Handling missing data: Dealing with missing values and implementing proper strategies for imputation
- Adding the feature to fetch real-time Ethereum prices using API, as well as adding the filter tables for candidates using pandas

## Successes:

User-Friendly Interface: The intuitive interface enhances user experience, making candidate selection and payment transactions straightforward

Data Visualization (pandas): Visual representations of candidate ratings aid decision-making, providing a clear overview of employee quality

## Technologies Used:

1. Python
2. Streamlit
3. Web3.py
4. Pandas
5. Requests
6. dotenv
7. bip-44
8. Blockchain
9. API interface
10. Ganache



# DEMO

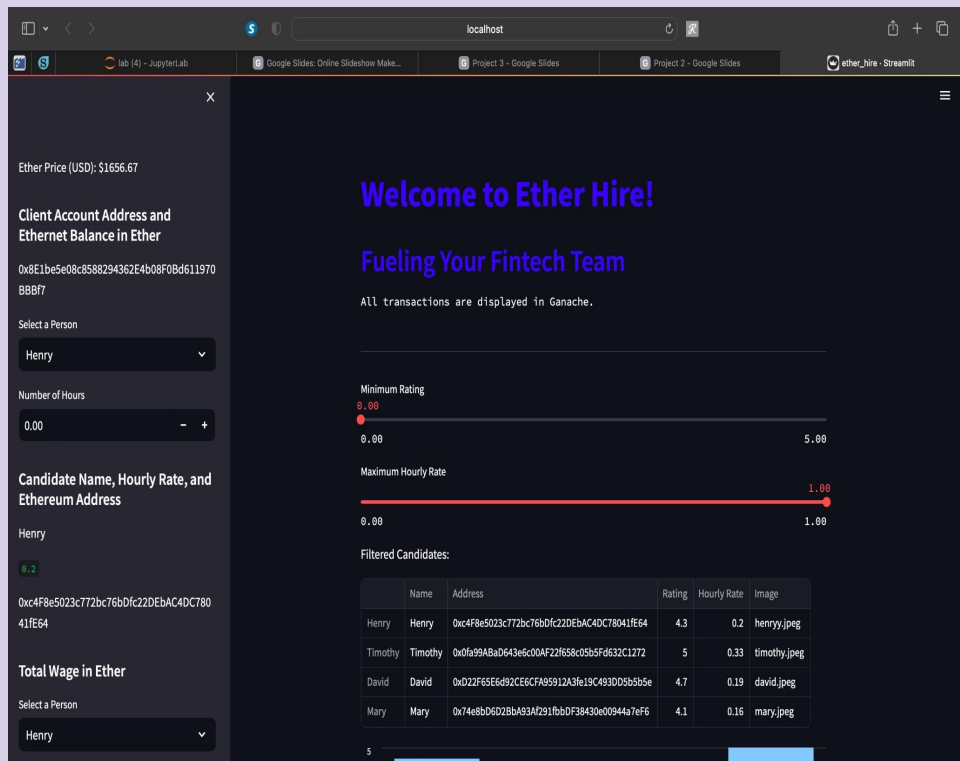
\*\* The code assumes that all necessary plugins are installed and the data is available from the proper API and Streamlit

\*\* All transactions are displayed in Ganache. Addresses for each client are copied from Ganache.

[http://localhost:8888/lab/tree/Project-3/ether\\_hire.py](http://localhost:8888/lab/tree/Project-3/ether_hire.py)

<https://github.com/KPass1000/Project-3>

\*\* The following figure represents a screenshot of the top of the interface. Inside the table are all candidates that are in the database.



# Benefits of the Models

**Blockchain:** Blockchain provides a highly secure platform for recording and storing transactions. It ensures immutability and tamper resistance, enhancing client trustworthiness.

**Ganache:** Ganache provides a local, private blockchain network for development and testing purposes, allowing developers like myself to simulate Ethereum operations without the use of real Ether.

**Ethereum addresses:** Derived from cryptographic keys presented in Ganache, providing proof of ownership and participation

**Filter model:** Reduces the time and effort needed to browse through the many freelancers, and helps our customers narrow down their search to match their needs

<https://cointelegraph.com/news/how-to-use-ganache-for-blockchain-project-development>

# Next Steps

## Additional Questions:

1. How can the platform be integrated with external with external job posting platforms to expand its reach?
2. What specific strategies can be implemented to monetize the platform, such as premium features or subscription models?

## Additional Topics:

1. Positive User Feedback and Adoption: Positive user feedback underscores the project's success in meeting user needs. Additionally, high user adoption rates demonstrate the platform's effectiveness in hiring freelance hiring and payments.
2. Scalability for Future Growth: Usage of AI and Amazon Web Services to accommodate a growing user base.



# Future Plans for Development

- Incorporate machine learning and AI for expansion of the project capabilities. Potentially use robo-advisers to make more accurate predictions
- Allow the customer to engage with the platform more intensely; for instance, integrate more client inputs aside from filters to match their objectives and desired search results



# Links

[http://localhost:8888/lab/tree/Project-3/ether\\_hire.py](http://localhost:8888/lab/tree/Project-3/ether_hire.py)

<https://github.com/KPass1000/Project-3>

**\*\*** Code explained in Python notebook