

ProofAI User Manual

1. Introduction

ProofAI is a decentralized AI training and validation platform built on blockchain and IPFS. It allows users to securely store, share, and train machine learning models in a trustless environment.

2. System Requirements

Operating System

- Windows

Hardware

- **Minimum:** 4GB RAM, Dual-core CPU

Network

- Stable internet connection

Software Dependencies

- **IPFS:** At least one node in the network must have IPFS running.

Python: Required for mining. Ensure Python is installed and globally accessible by running:
`python --version`

3. Installation Guide

Windows Installation

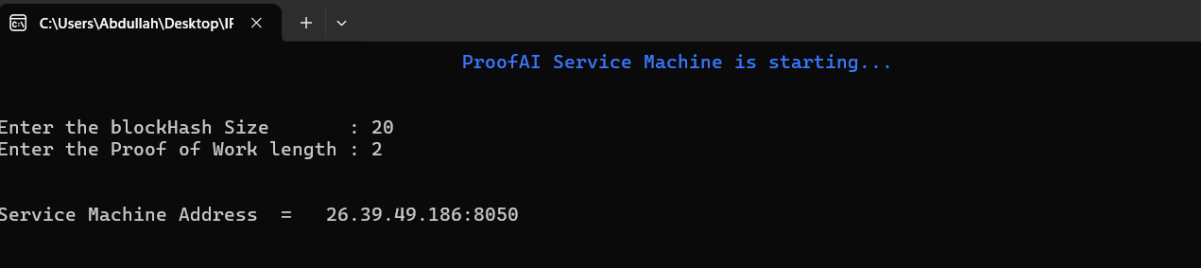
1. Download the `.exe` installer from the [official website or GitHub].
2. Run the installer and follow the on-screen instructions.
3. After installation, open ProofAI **as an administrator**.

4. Download **ProofAI_NetworkManager.exe** and run it on any machine in the network.
 5. Ensure your laptop is publicly accessible on the internet. Use **Radmin VPN** if miners are on different networks.
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4. Getting Started

1. Running ProofAI

- Launch **ProofAI_NetworkManager.exe** on any machine in the network.



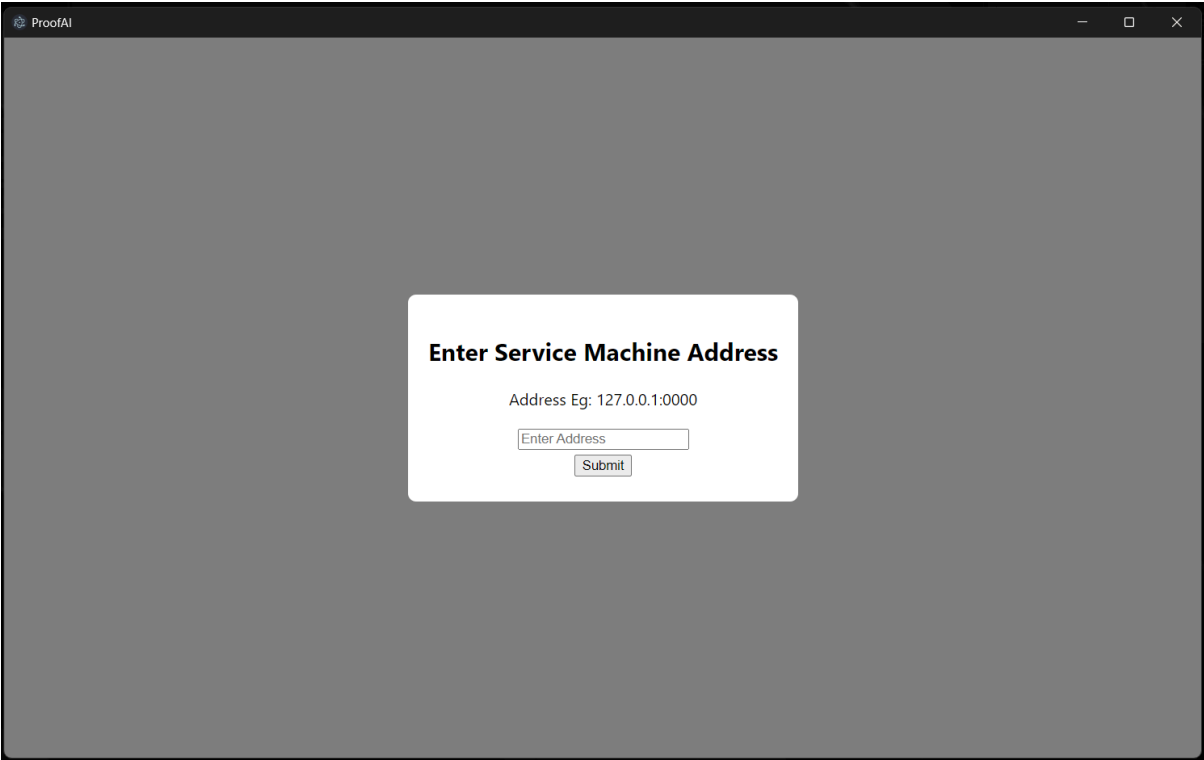
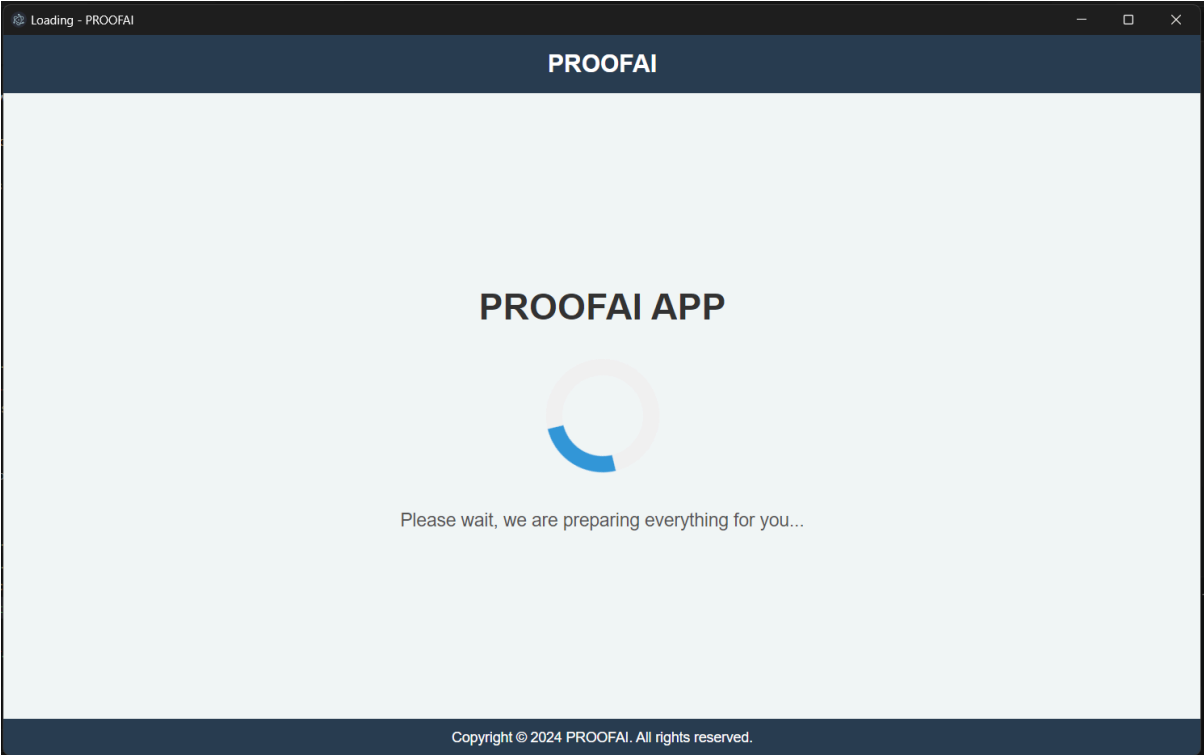
```
C:\Users\Abdullah\Desktop\VF x + v
ProofAI Service Machine is starting...

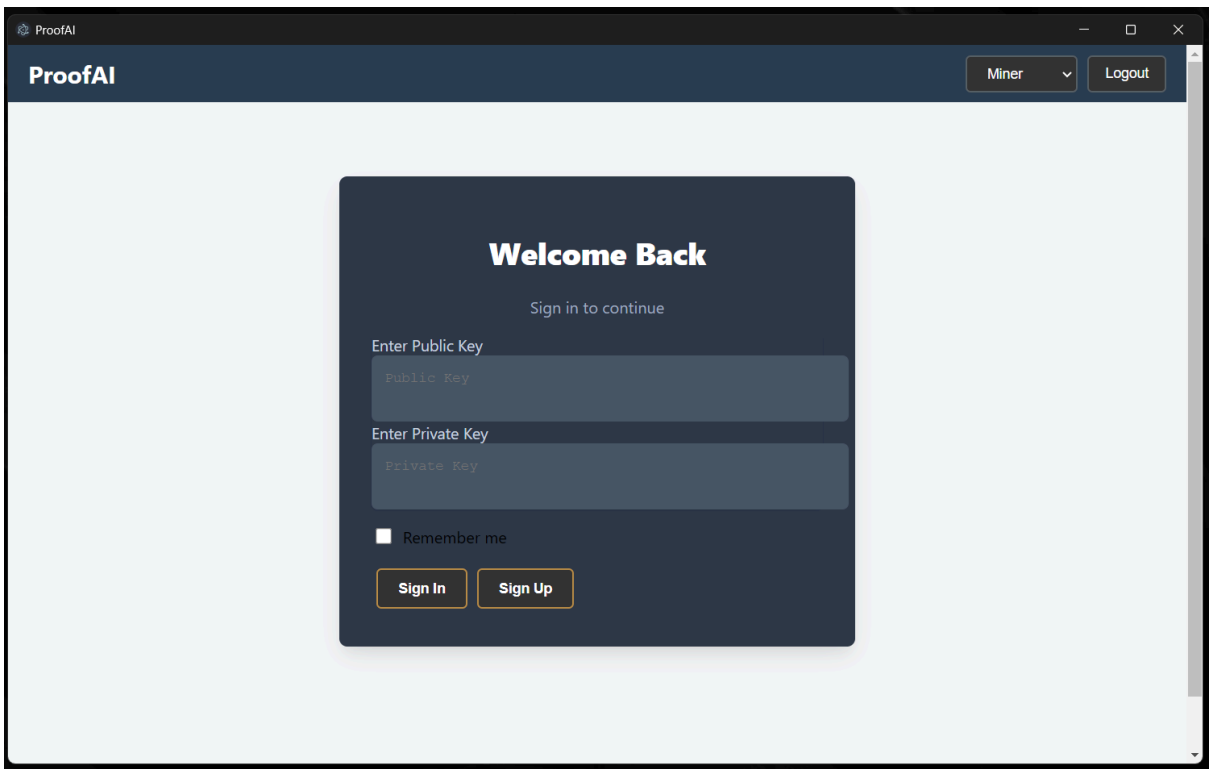
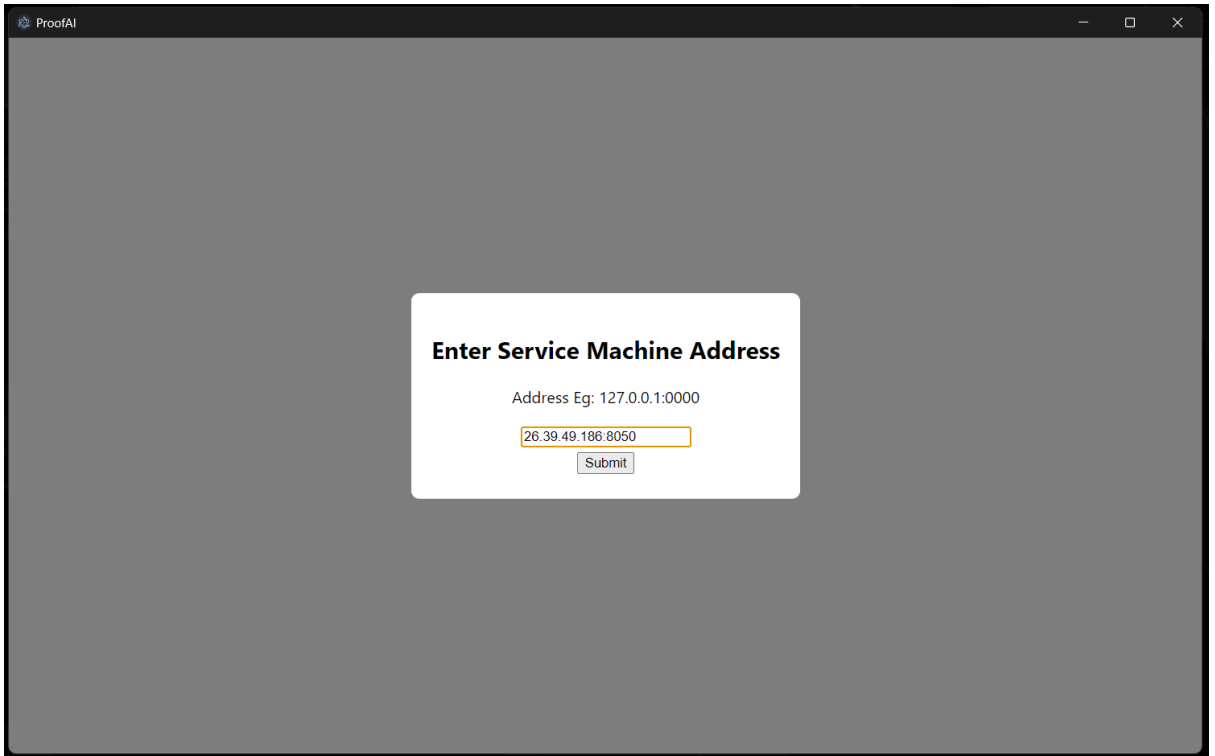
Enter the blockHash Size      : 20
Enter the Proof of Work length : 2

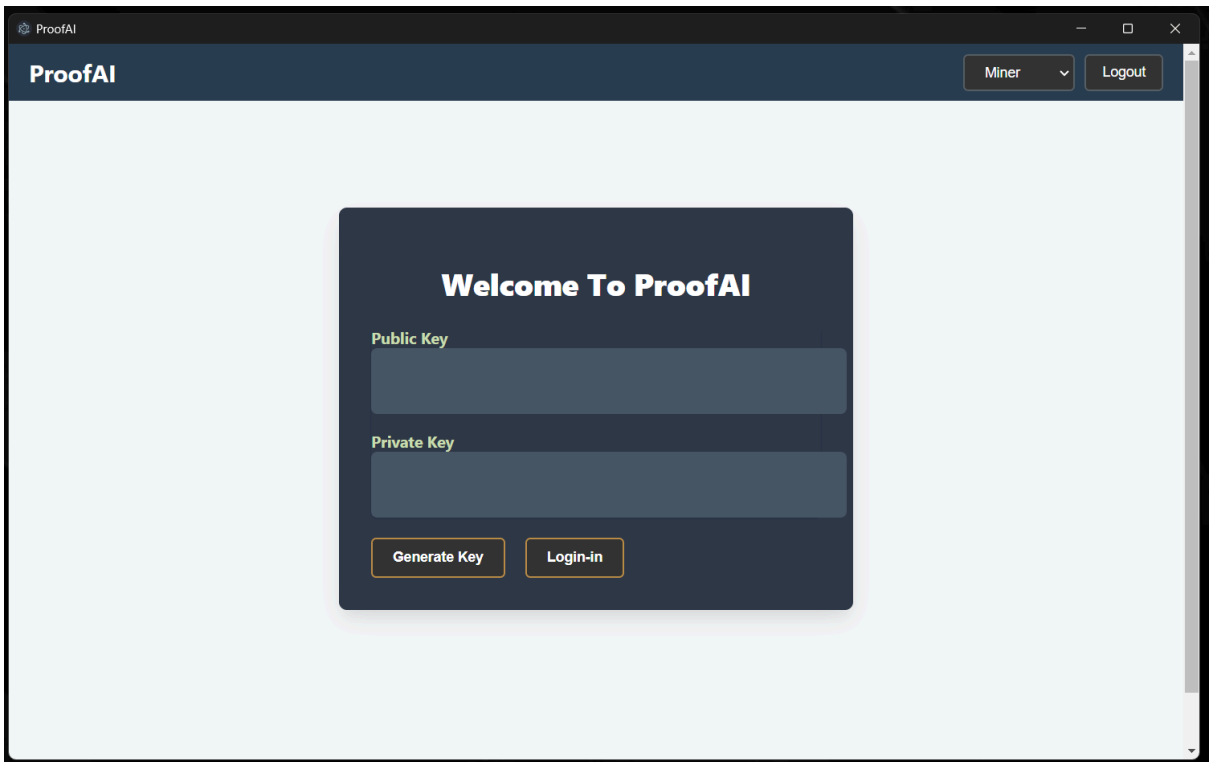
Service Machine Address = 26.39.49.186:8050
```

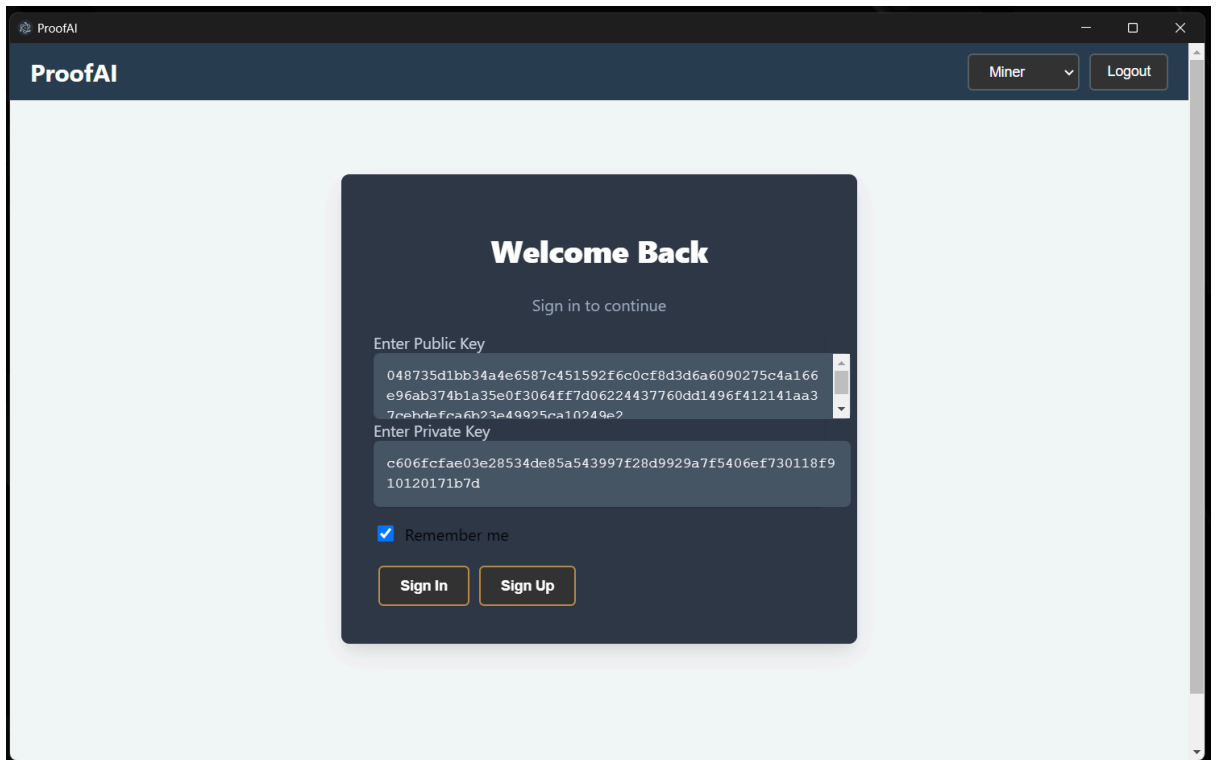
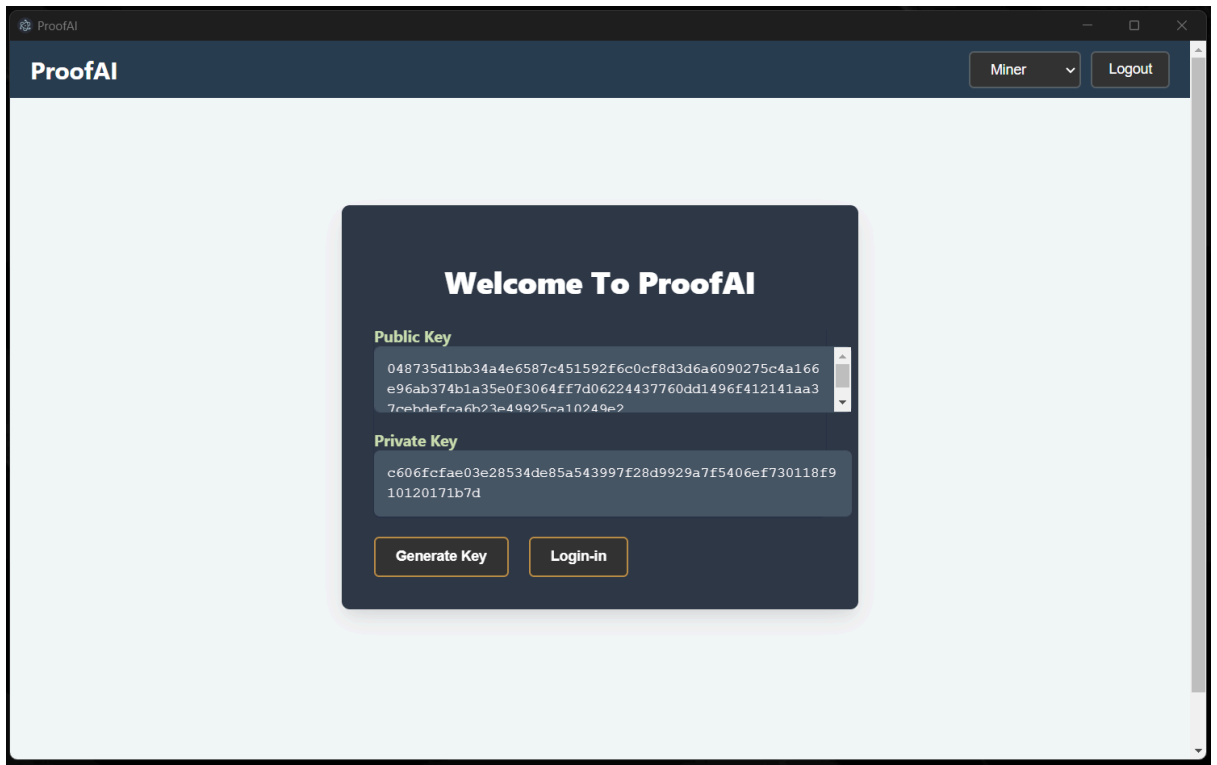
2. Login / Signup

- **New User:** Generate a key pair (public & private key) for secure authentication.
- **Existing User:** Enter your private key to access your account.



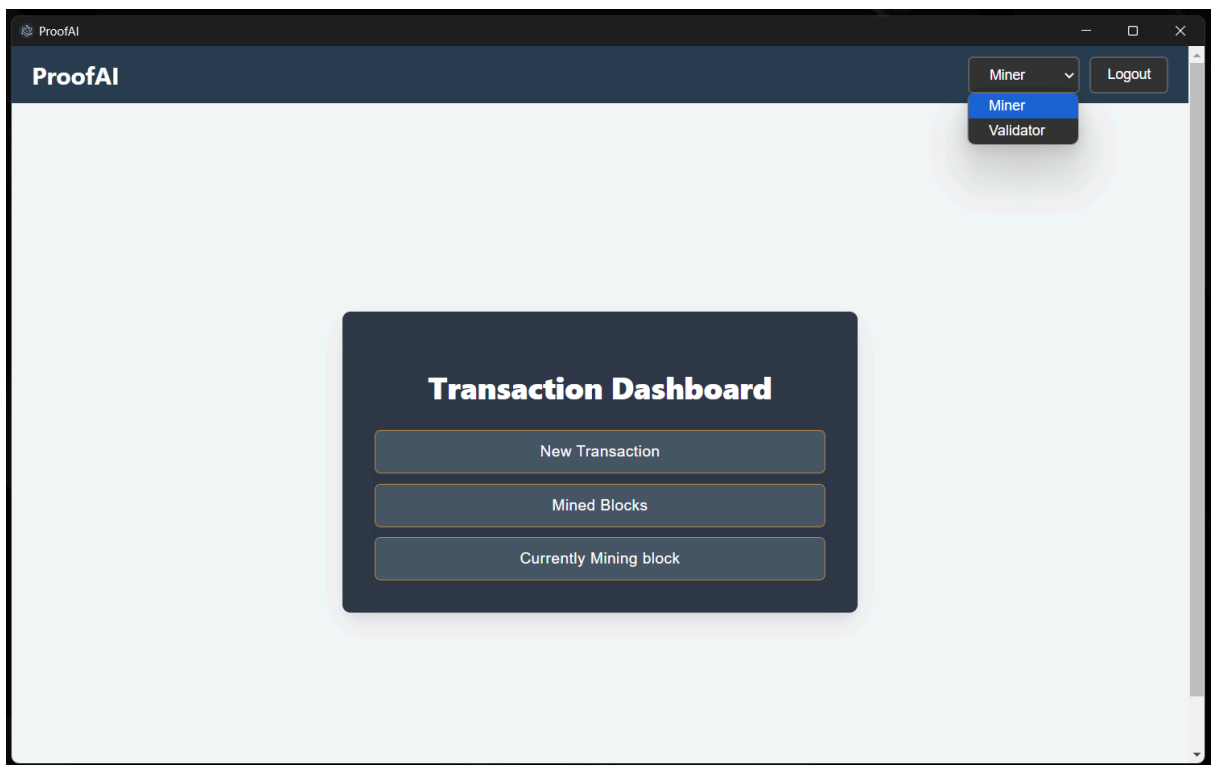
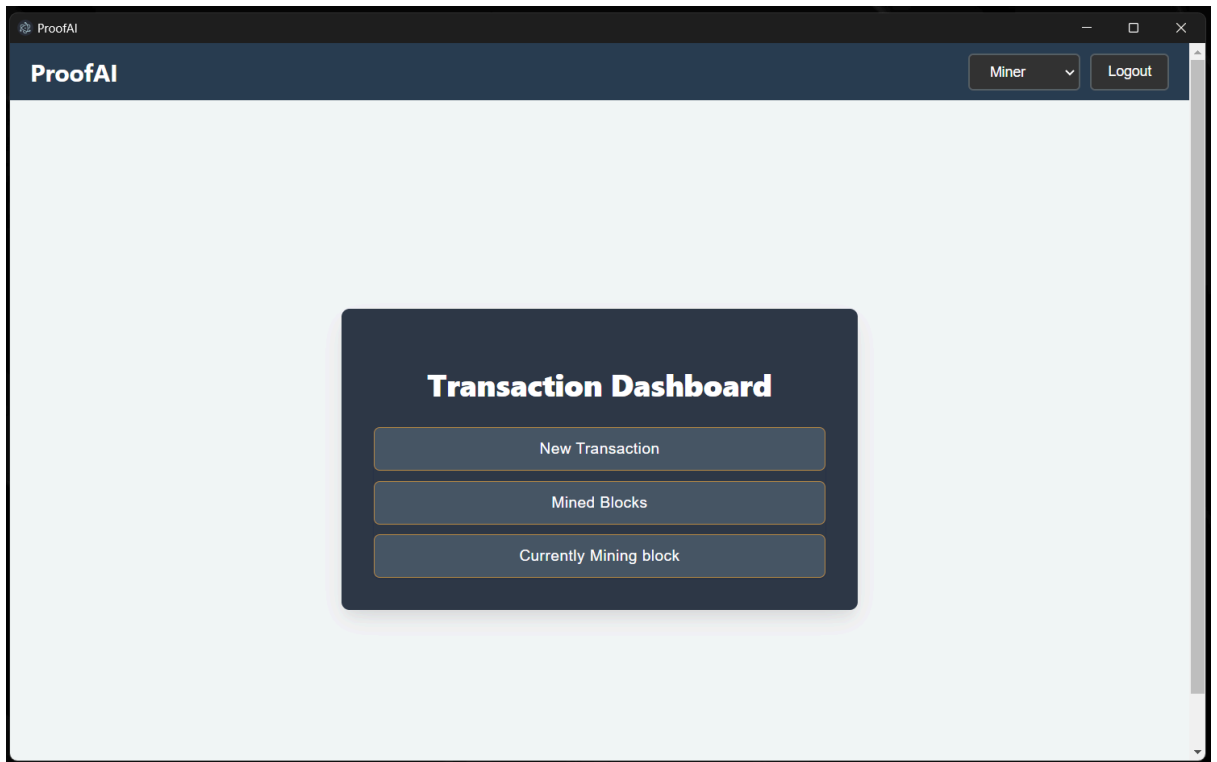




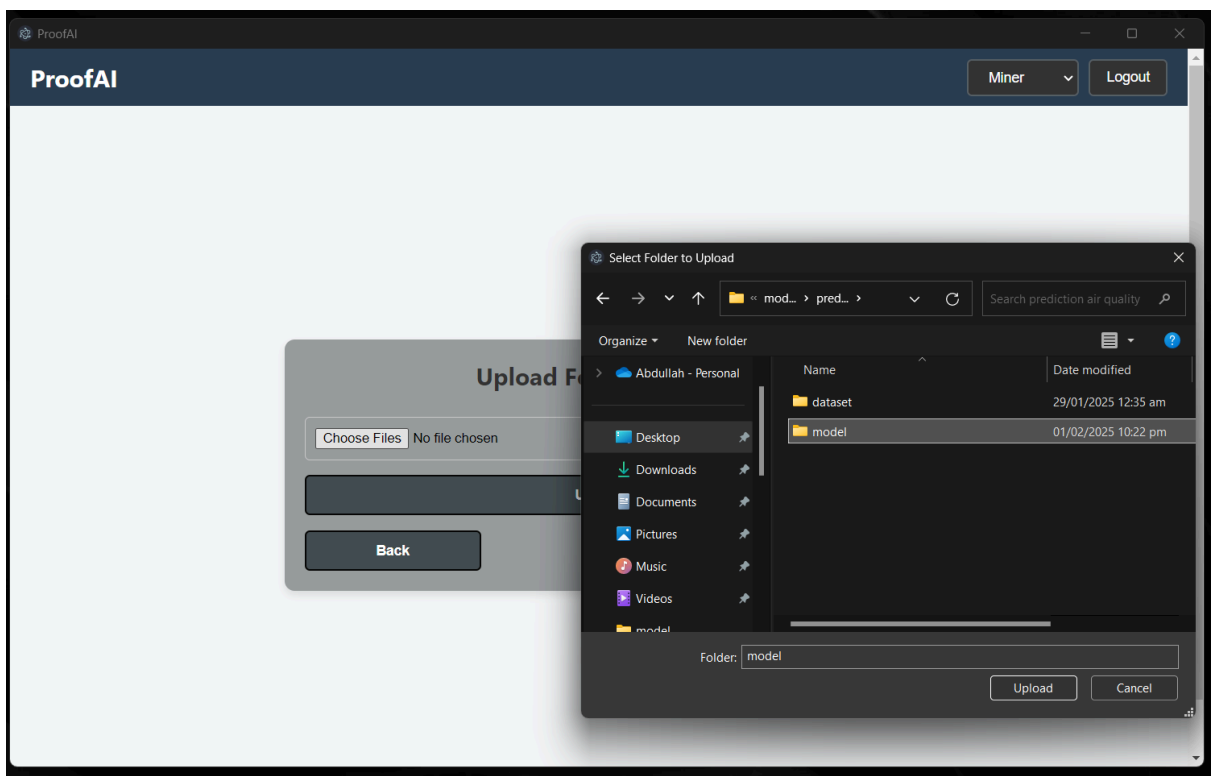
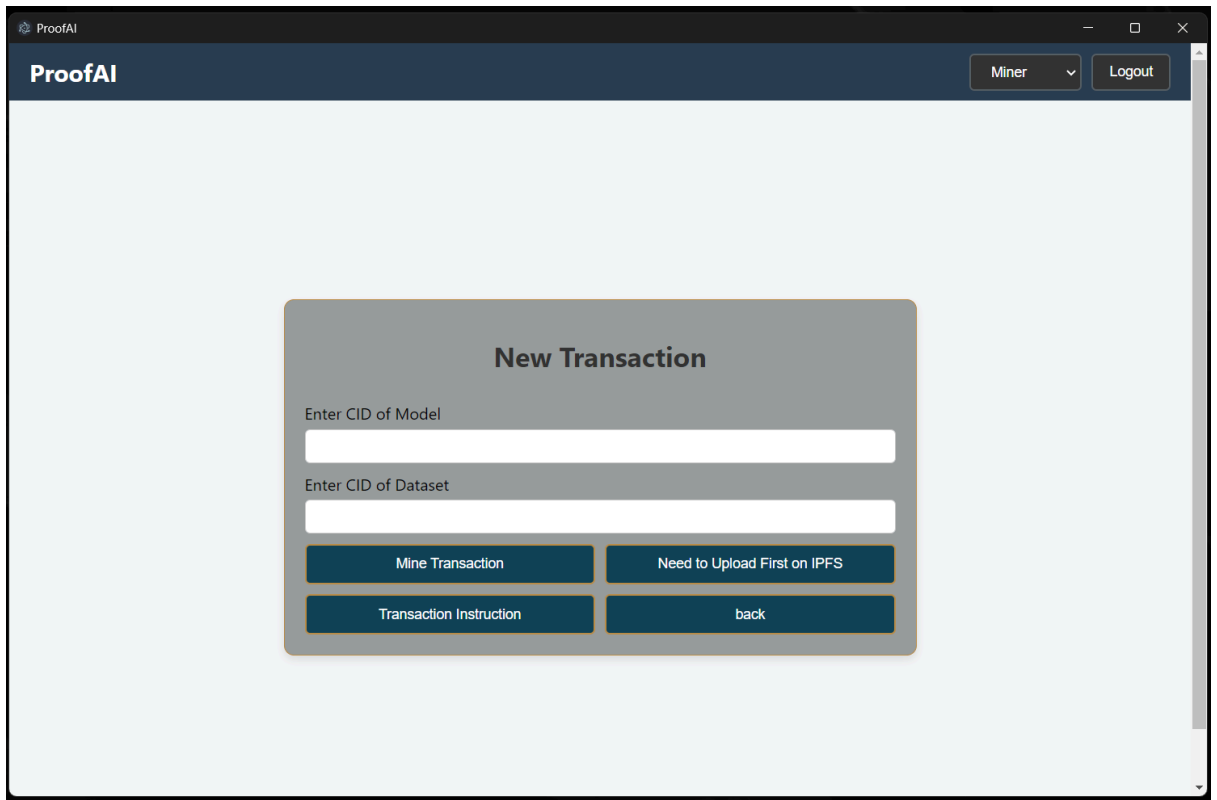


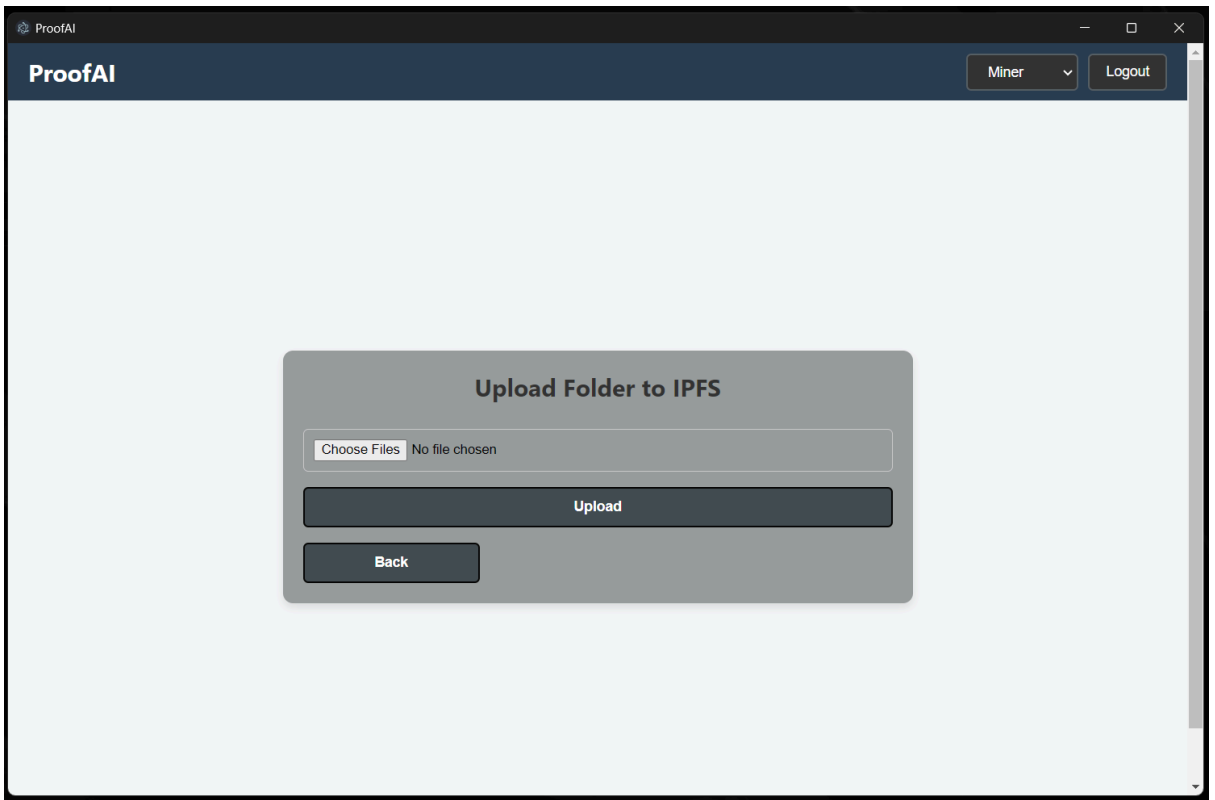
4. Dashboard Features

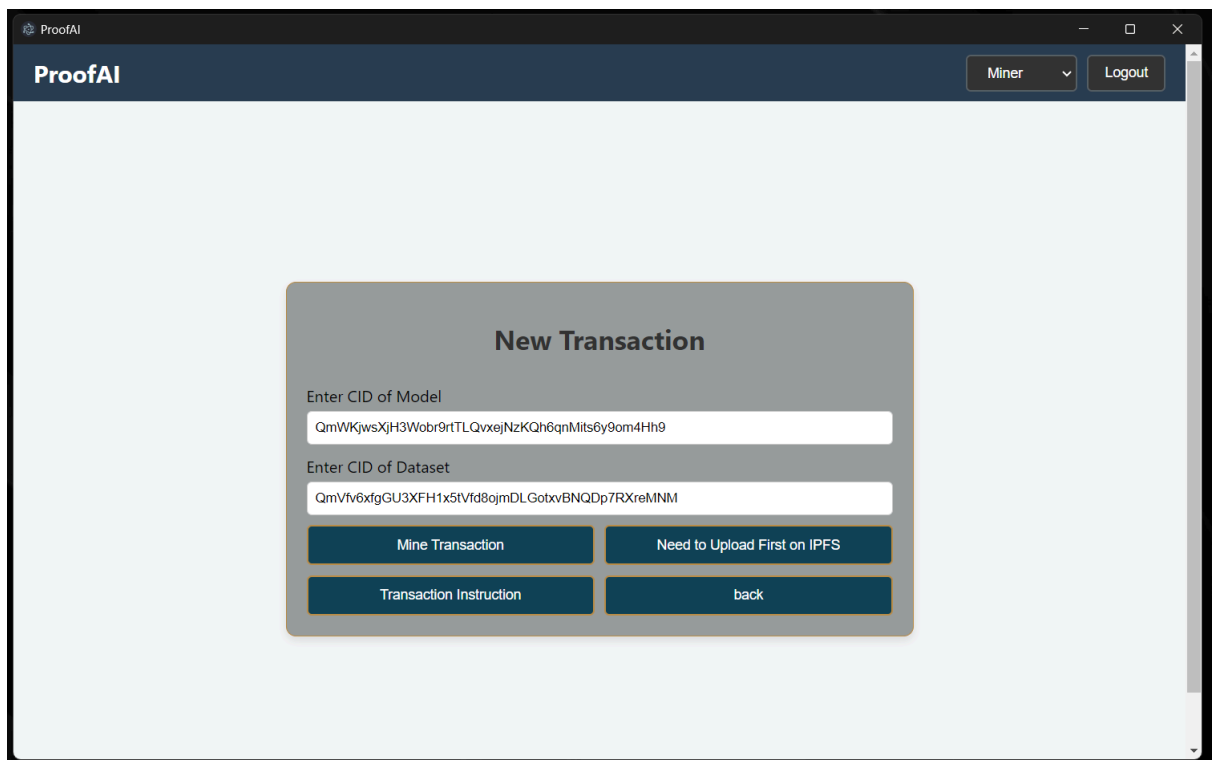
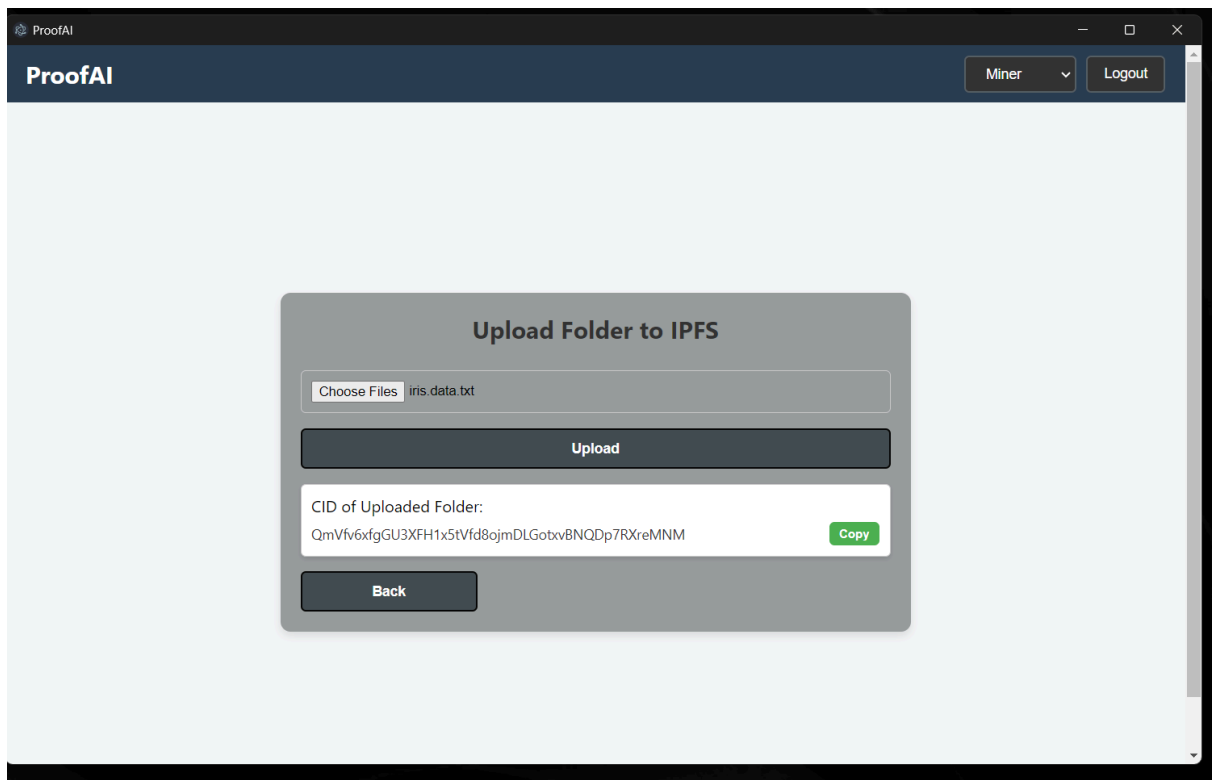
- **Change Role** (Miner / Validator)



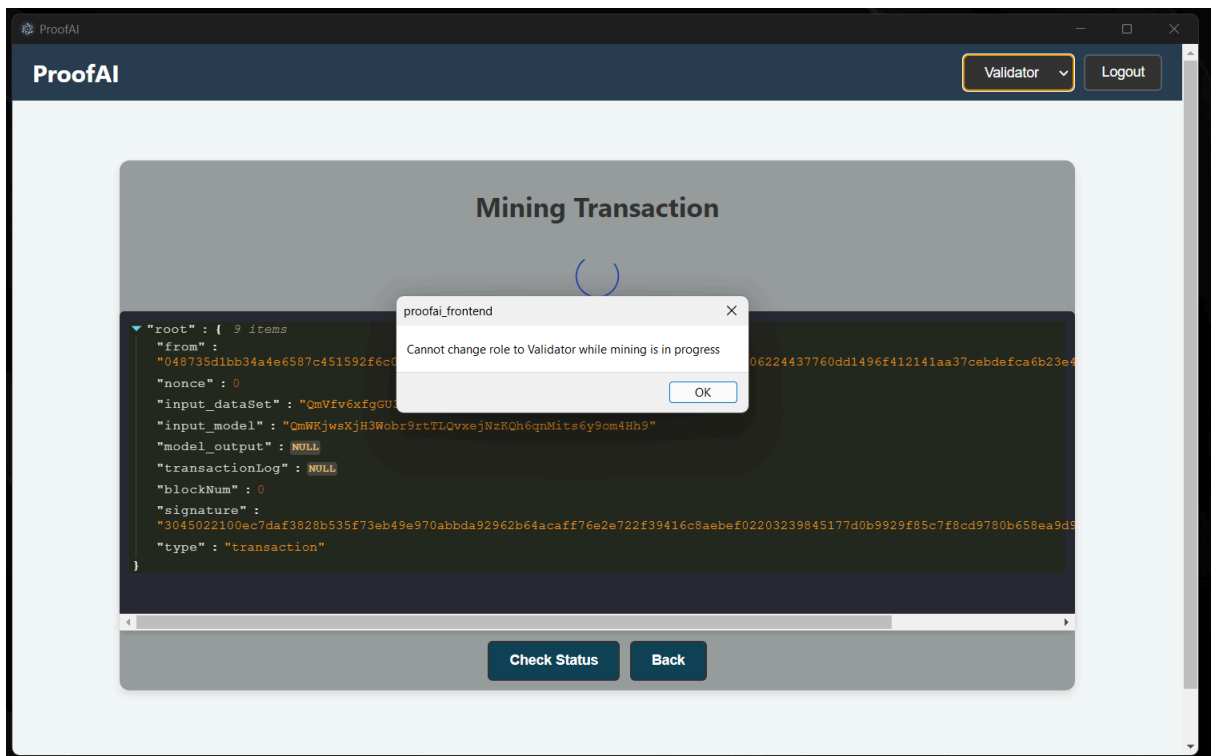
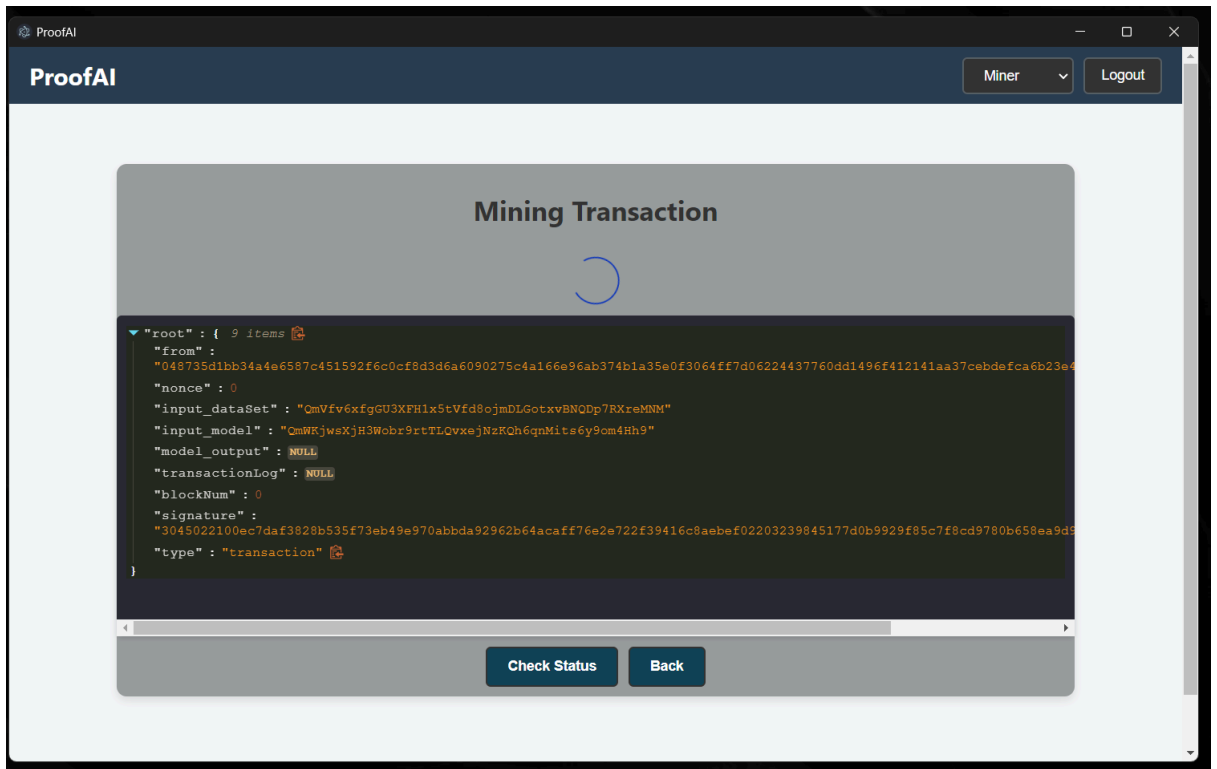
- **New Transaction:** Upload models and datasets to IPFS.



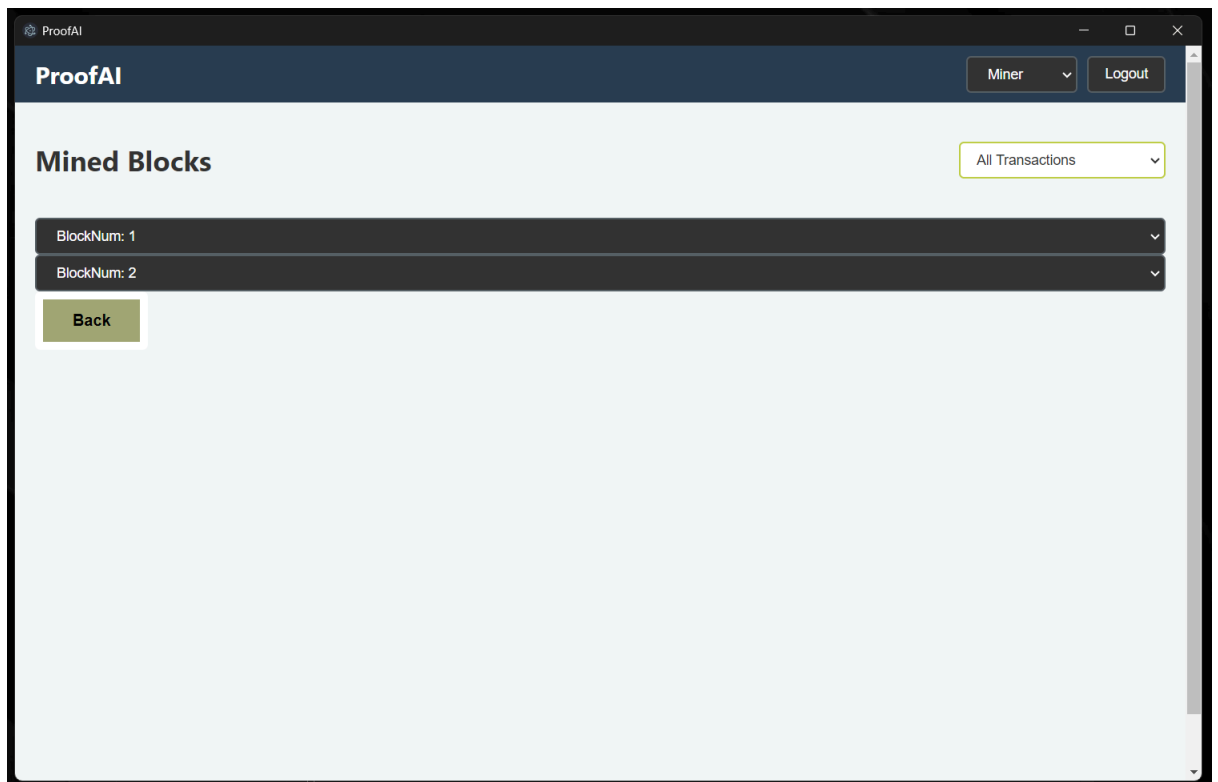




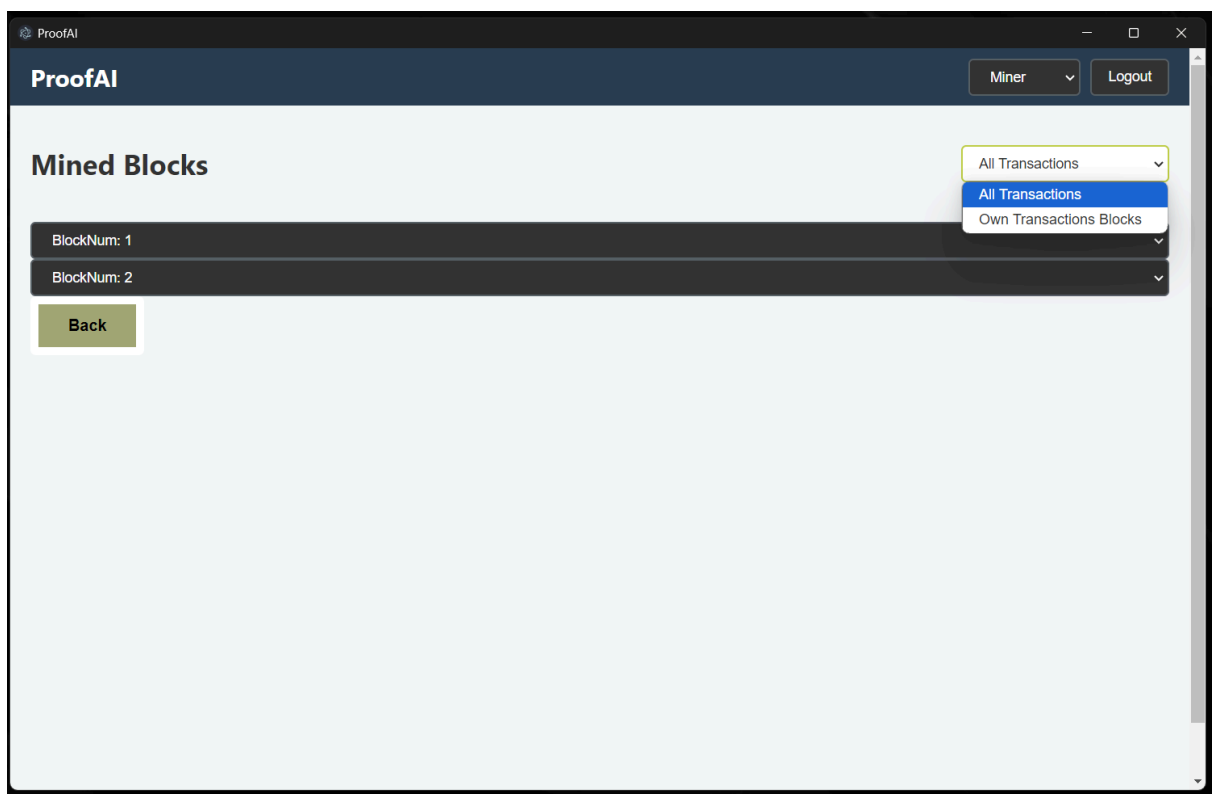
- Transaction Confirmation & Mining Status



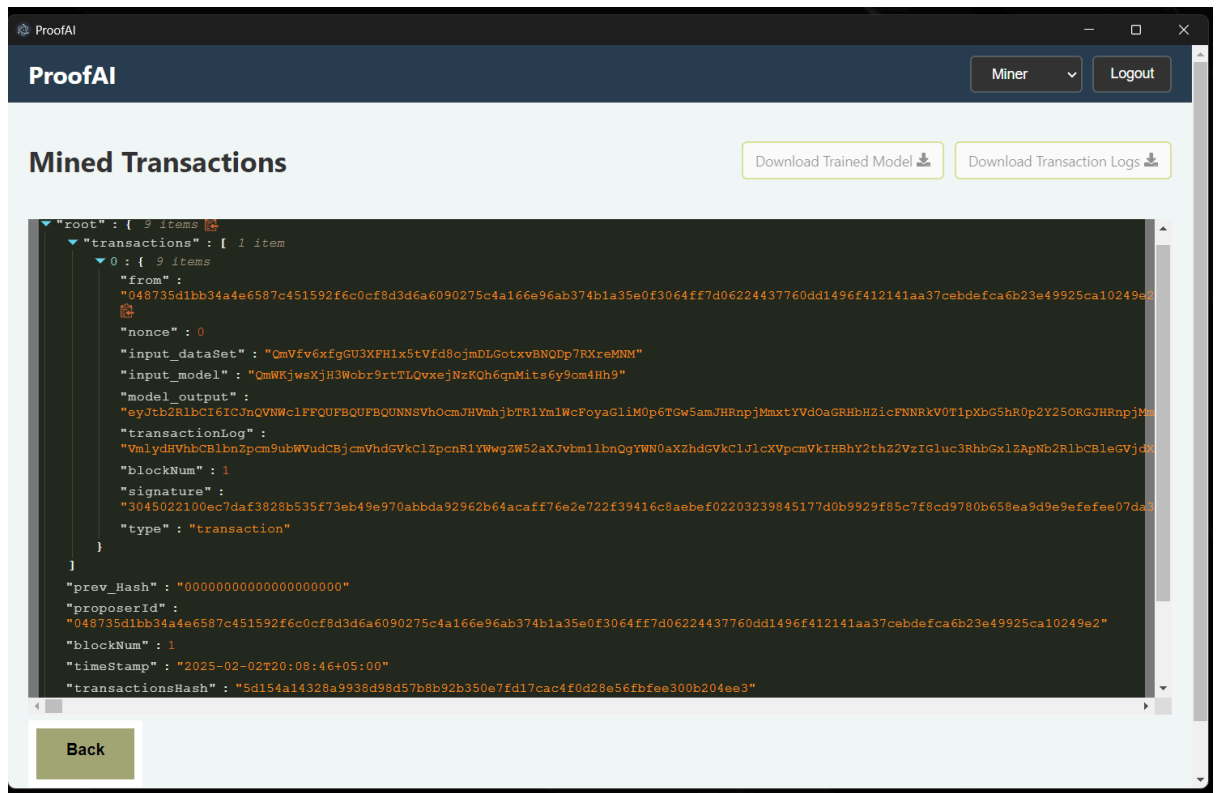
- View & Filter Blocks:



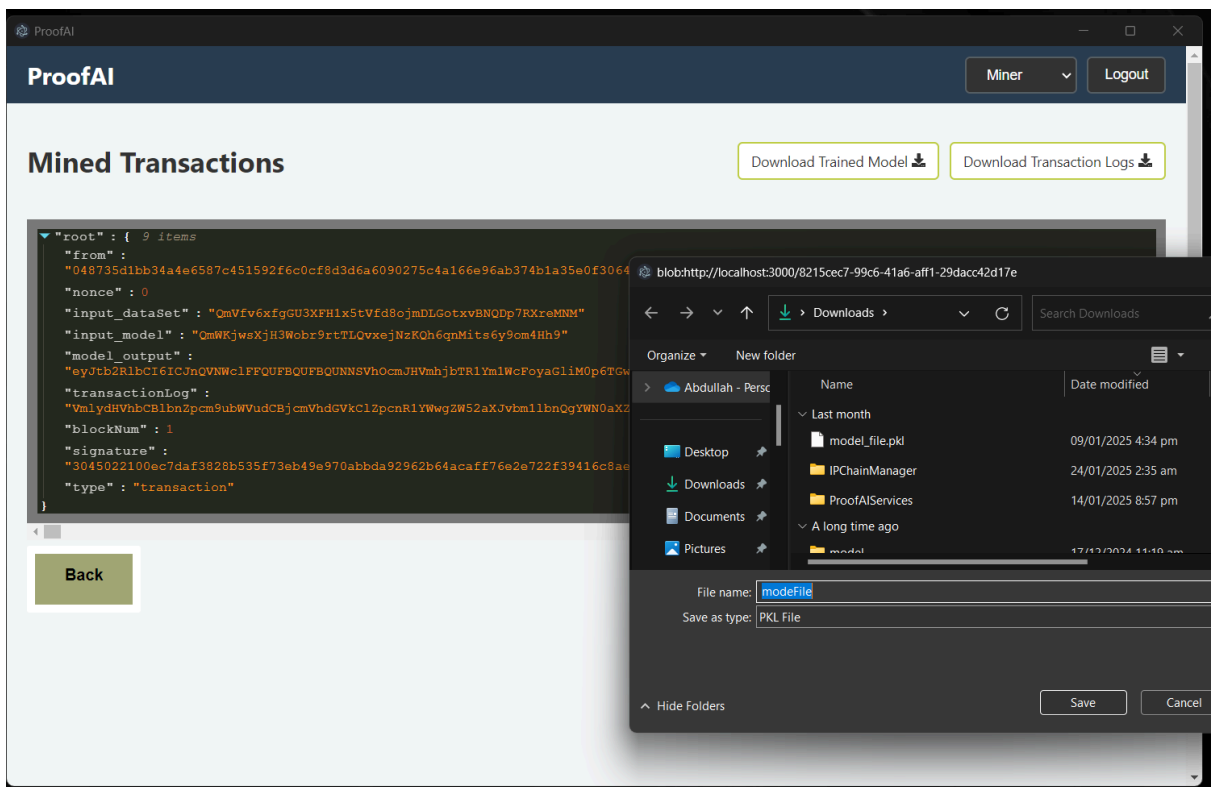
Filter blocks.

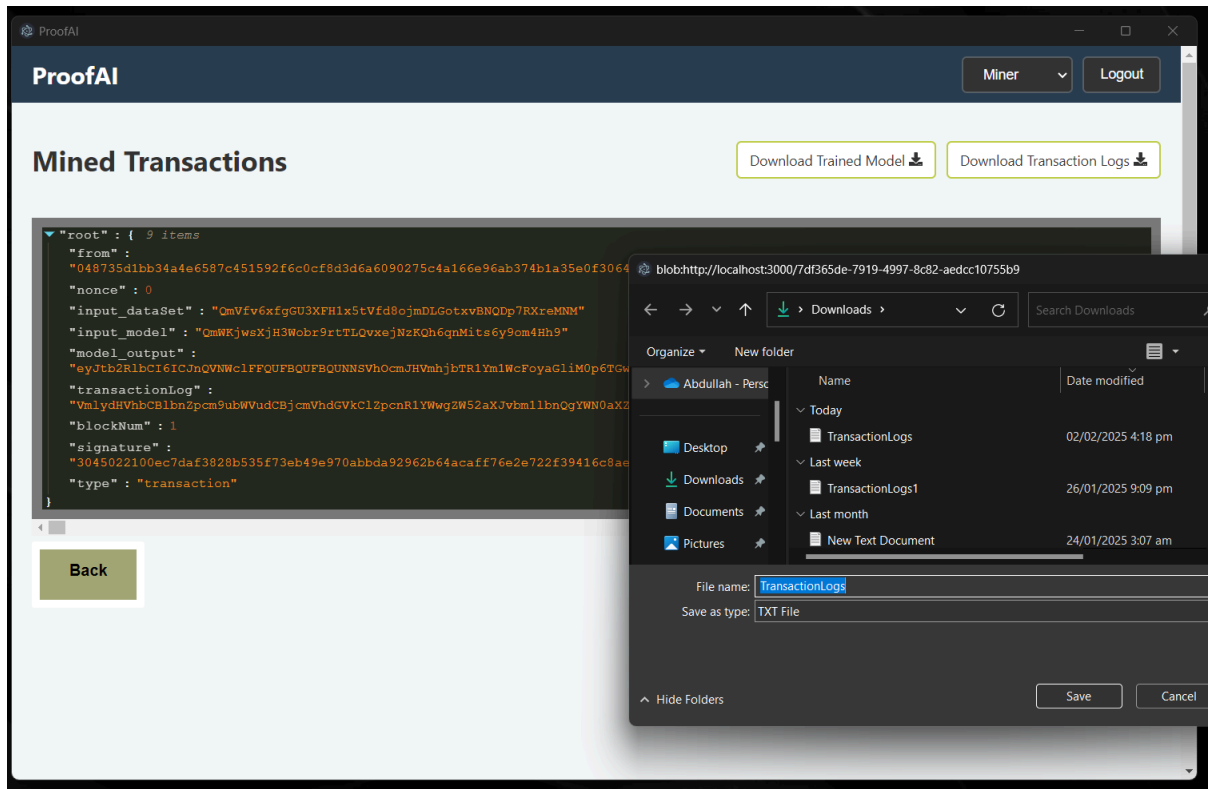


- View specific mined blocks.

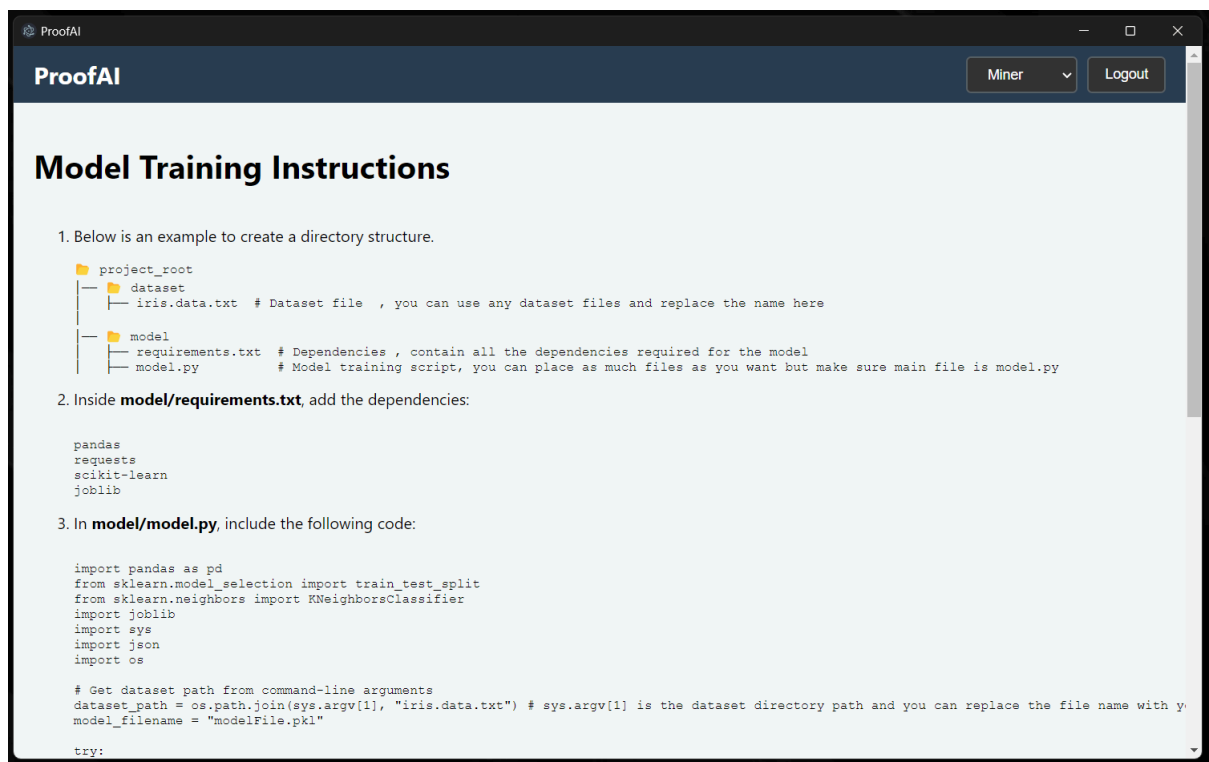


- View Transaction and Download its trained model and logs.





4. New Transaction Instruction



5. Connecting to the Network

- Upon login, ProofAI connects to a randomly selected registered machine (IP node) for communication.
 - A secure socket connection is established for decentralized transactions.
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6. Switching Roles: Miner vs Validator

Miner Role

- Fetches datasets and models via **CID (IPFS)**.
- Trains the model and performs **Proof-of-Work**.
- Broadcasts the mined block to the network.

Validator Role

- Verifies the **Proof-of-Work**.
 - Stores validated blocks in the ledger.
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7. Making Transactions

- Provide the **dataset CID (IPFS)** and **model directory (dependencies + training script)**.
 - Transactions are broadcasted for mining and validation.
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8. Model Training Instructions

Directory Structure

Before uploading to IPFS, structure your project directory as follows:

```
📁 project_root
├── 📁 dataset
│   └── dataset_file.txt # Replace with actual dataset file
├── 📁 model
│   ├── requirements.txt # Dependencies required for training
│   └── model.py         # Model training script
```

Example : prediction air quality code

https://github.com/MuhammadAbdullah950/ProofAI-TrainModel_Example.git

9. Troubleshooting