

## Anthill AI+ Evaluation Tool

The Anthill AI+ Evaluation Tool is a sophisticated, professional-grade application for venture capital deal analysis. It leverages a hybrid AI engine, combining a predictive PyTorch model with the generative power of Google's Gemini AI to deliver deep, multi-faceted insights into startup viability.

The tool analyzes both quantitative and qualitative data to produce a comprehensive report, including an AI-synthesized valuation, a data-driven Speedscaling Quotient (SSQ), a Monte Carlo financial simulation, and a complete investment memo.

### Features

- **Hybrid AI Engine:** Fuses a predictive neural network (for success probability and valuation) with generative AI (for market analysis and memo generation).
- **Speedscaling Quotient (SSQ):** A proprietary metric to gauge a startup's potential for efficient, rapid growth, with weights dynamically adjusted based on the investment focus area.
- **Monte Carlo Simulation:** Runs thousands of financial scenarios based on the startup's historical data to produce a probabilistic runway and survival analysis.
- **Deep-Dive Market Analysis:** Uses AI to generate a detailed report on the Total Addressable Market (TAM), competitive landscape, and economic moats.
- **Automated Investment Memo:** Produces a professional, narrative-driven investment memo with clear bull and bear cases.
- **Polished Streamlit UI:** An intuitive, professional user interface for data entry and report visualization.

### Project Structure

```
your_project_folder/
├── .streamlit/
│   └── secrets.toml    # Your secret API keys
├── logs/
│   └── engine.log      # Auto-generated log file
├── ai_plus_model.pth   # The trained PyTorch model
├── preprocessor.pkl     # The scikit-learn preprocessor
├── app.py              # The main Streamlit application
├── next_gen_vc_engine.py # The core AI and financial logic
├── train.py            # Script to train the ML model
└── requirements.txt    # Project dependencies
```

## Setup & Installation

### 1. Prerequisites

- Python 3.9+
- pip package manager

### 2. Clone the Repository

```
git clone <your-repository-url>  
cd <your-repository-folder>
```

### 3. Install Dependencies

It is highly recommended to use a virtual environment.

# Create and activate a virtual environment (optional but recommended)

```
python -m venv venv
```

```
source venv/bin/activate # On Windows, use `venv\Scripts\activate`
```

# Install required packages

```
pip install -r requirements.txt
```

### 4. Set Up API Keys

The application requires API keys for Google Gemini and Alpha Vantage.

- Create a folder named `.streamlit` in your project's root directory.
- Inside the `.streamlit` folder, create a file named `secrets.toml`.
- Add your keys to the `secrets.toml` file in the following format:

```
# .streamlit/secrets.toml
```

```
ALPHA_VANTAGE_KEY = "YOUR_ALPHA_VANTAGE_KEY_HERE"
```

```
GEMINI_API_KEY = "YOUR_GEMINI_API_KEY_HERE"
```

## How to Use

### 1. Train the Model (One-Time Step)

Before running the application for the first time, you must train the predictive model.

This script generates the ai\_plus\_model.pth and preprocessor.pkl files.

```
python train.py
```

## **2. Run the Application**

Once the model is trained, you can run the main Streamlit application.

```
streamlit run app.py
```

The application will open in your web browser. Fill in the startup's details across the two tabs and click "Run AI+ Analysis" to generate the full report.