NIT3004 – IT Capstone Project 2

Semester 2, Block 4 (H2B4) – Group 14

TranslateAI: User Manual

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1. Introduction

TranslateAI is a multilingual, AI-powered web application developed for the Victoria University IT Capstone Project 2. It enables real-time translation of text, voice, image, and document inputs using OpenAI's GPT-4 model, LangChain, and Supabase authentication. The application was designed to be lightweight, responsive, and easily deployable on any device. This manual provides a clear and beginner-friendly guide to installing, configuring, and operating TranslateAI on your local computer or through Cloudflare.

2. Prerequisites:

Before beginning the setup, please ensure that you have the following:

- Operating System: Windows 10 or Windows 11
- Software:
    - Visual Studio Code
    - Node.js (version 20 or higher)
    - Python 3.12+
    - "uv" package manager (used for Python dependency syncing)
- Internet connection: Required for accessing OpenAI API, Supabase Authentication, and Cloudflare Tunnel
- A valid OpenAI account with API key and at least $5.50 of active credit.

Tip: You do not need to know how to code to begin. Simply follow the steps exactly as shown below:

3. Getting Started and Installation

3.1 Download the code:

1. Go to the official GitHub repository: https://github.com/Plasmorix/ITCapstone2_TranslateAI_NachiketPatel

2. Click the green “**Code**” button, then select “**Download ZIP**”.

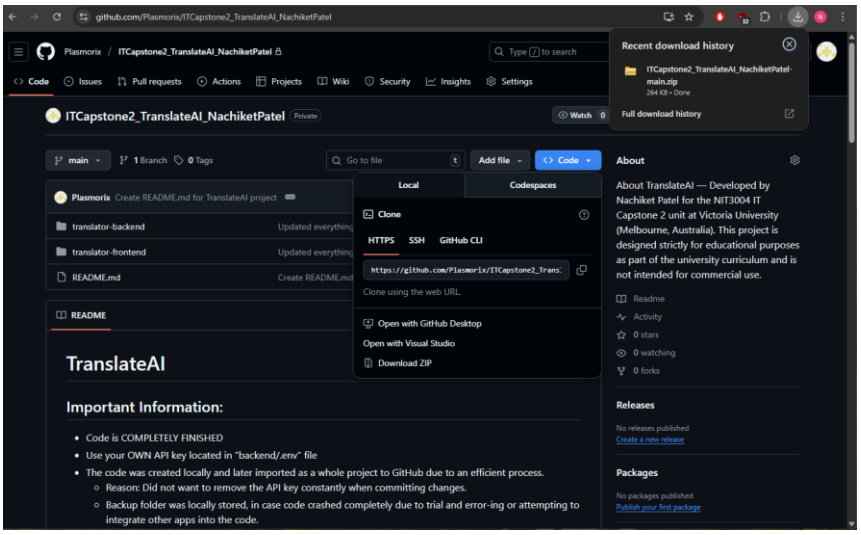

Figure 1. TranslateAI repository showing the Code menu with the Download Zip option. Moreover, the ZIP file has been downloaded as shown in the top-right corner of the screen..

3. Locate the file in your **Downloads** folder.

4. Right-click the file.
   4.1 Select **Extract All.**
   4.2 Choose a location (e.g. Desktop).

3.2 Open the folder in Visual Studio Code

5. Install **Visual Studio Code** if not already installed.
6. Open Visual Studio Code.
7. Click **File.**
   7.1 **Open Folder.**
8. Locate and select the extracted folder.

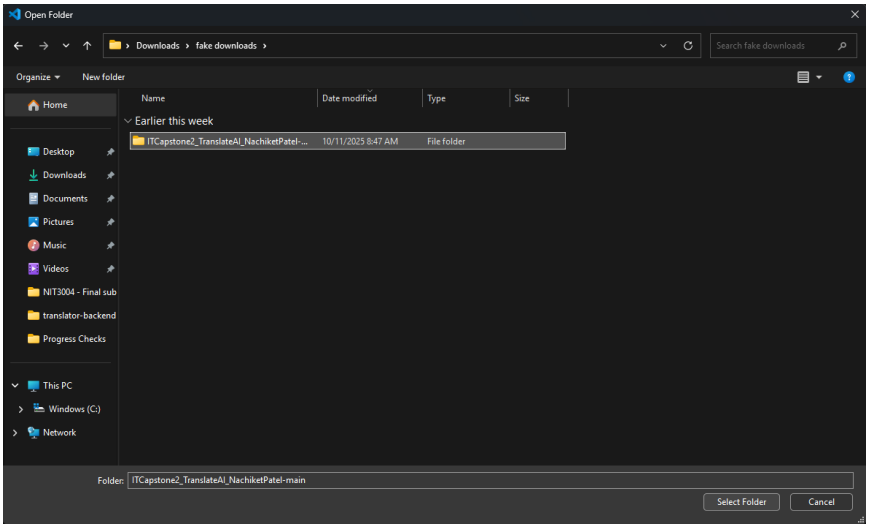

Figure 2. Opening the project folder in Visual Studio Code.

9. The folder structure should appear on the left-hand panel.

3.3 Location of ".env" file:

10. Navigate to:
    translator-backend/
11. Find the file named "**.env**" in the root of the backend folder.

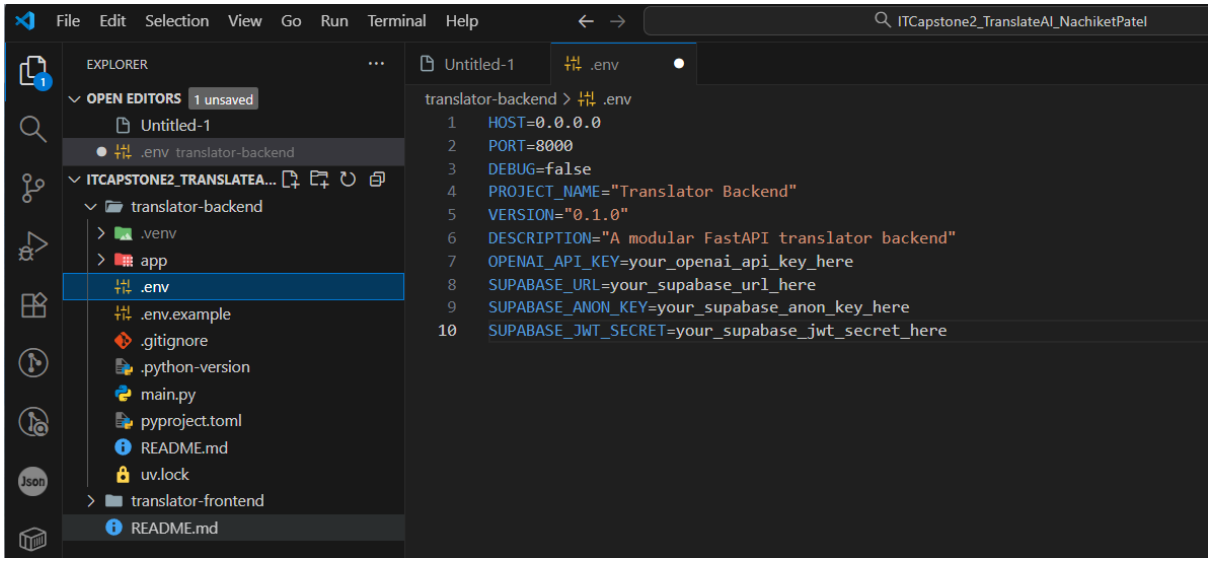

Figure 3. Locating the ".env" file in the backend directory.

3.4 OpenAI API Creation

12. Go to https://auth.openai/com/create-account and sign in or create an account.
13. Visit https://platform.openai.com/api-keys.
14. Click "Create new secret key"
    14.1 Name it "**Translation Key**"
    14.2 **Copy** the key and keep it private

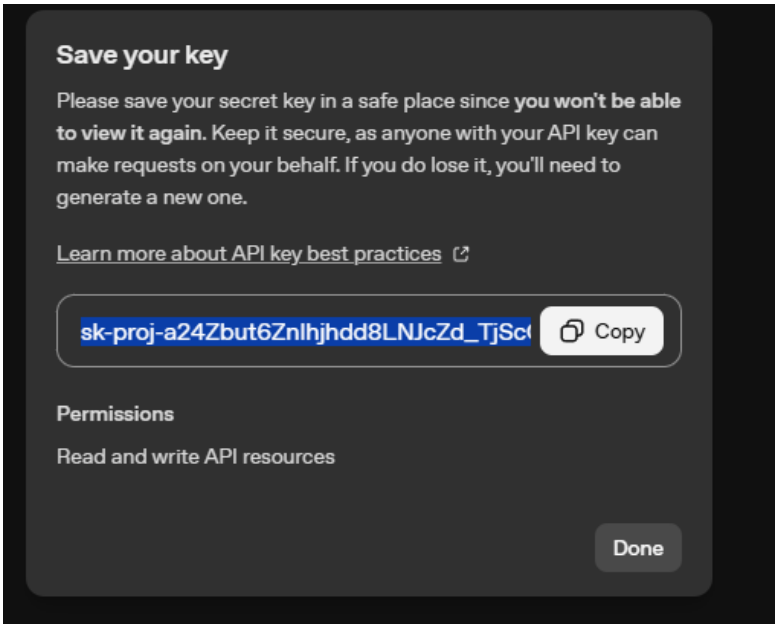

Figure 4. OpenAI dashboard displaying a freshly generates secret API key.

15. Open the "**.env**" file in the backend folder.
16. Paste your key after the equals sign on the line below:
    OPENAI_API_KEY=sk-proj-a…yourkeyhere…
17. Refer to the "**.env.example**" file for additional guidance.

3.5 Supabase Setup

18. Go to https://supabase.com.
19. Sign in with Google or GitHub.
20. Click **New Project**.
    20.1 Name it "**TranslateAI**".
    20.2 Click **Create Project.**
21. Go to **Table Editor**.
    21.1 Create Table.
    21.2 Name it "**translation_history**".
22. Add the following columns:
    - 'id` (UUID, Primary Key)
    - `user_id` (UUID)
    - `input_text` (Text)
    - `translated_text` (Text)
    - `source_lang` (Text)
    - `target_lang` (Text)
    - `modality` (Text)
    - `created_at` (Timestamp, Default = now)
23. Go to **Auth.**
    23.1 Then, **Policies**.
    23.2 Enable **Row Level Security (RLS)**.

24. Under **API Settings**, copy:
    - Project URL
    - Anon Key
    - JWT Secret
25. Paste both into your backend '.env' file like this:

```
SUPABASE_URL=your_supabase_url_here
SUPABASE_ANON_KEY=your_supabase_anon_key_here
SUPABASE_JWT_SECRET=your_supabase_jwt_secret_here
```

Figure 5. Example of ".env" file layout for Supabase key

3.6 Configure the Frontend ".env.local" file.

26. Open the **frontend-translator** folder.
27. Locate the "**.env.local**" file (Create one if it doesn't exist)
28. Copy the following lines into it with the keys used in /translator-backend/.env file:

```
NEXT_PUBLIC_API_URL=http://localhost:8000
NEXT_PUBLIC_SUPABASE_URL=your_supabase_url_here
NEXT_PUBLIC_SUPABASE_ANON_KEY=your_supabase_anon_key_here
```

Figure 6. Correct layout of /translator-frontend/.env.local.

3.7 Run the Backend Server

29. In Visual Studio Code, right-click the translator-backend folder
    29.1 Click "**Open in Integrated Terminal**".
30. First, install the backend dependencies by running:
    "**uv sync**"

Note: This installs all required Python packages listed in the pyproject.toml file using the uv manager.

31. Once installation is complete, start the backend server using:
    "**uv run main.py**"
32. The terminal will display:
    "*Uvicorn running on http://0.0.0.1:8000*" – indicating that the backend is live.
33. **Keep this terminal open.** Closing it will end the backend service.
    (*To manually quit, press **Ctrl + C.***)

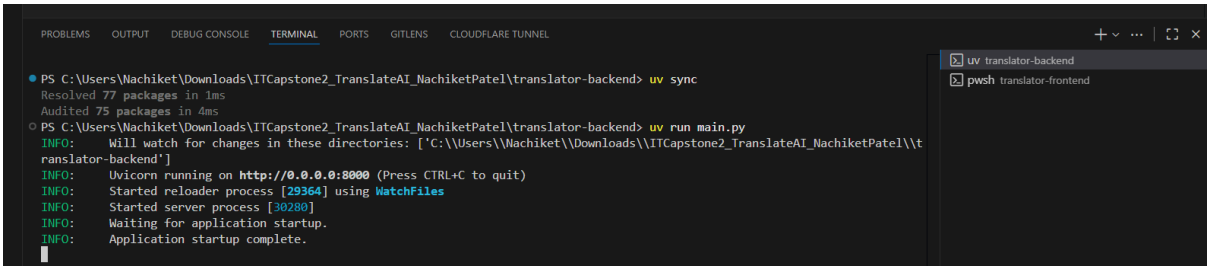

Figure 7. Backend dependencies installed and local development server running successfully in the terminal.

3.8 Run the Frontend Server

34. In Visual Studio Code, right-click the **translator-frontend** folder
    34.1Click "**Open in Integrated Terminal**"
35. Install frontend dependencies by running:
    "**npm i**"
    This command installs all packages in the package.json file.
36. After installation, start the frontend using:
    "**npm run dev**"
37. The terminal will display:

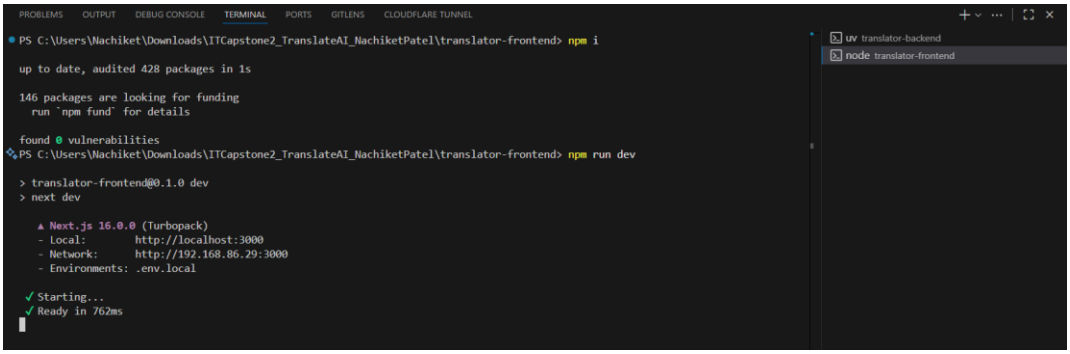

Figure 8. Frontend dependencies installed and local development server running on port 3000.

38. **Keep this terminal open**. Closing it will stop the frontend.

4. Using Translate AI

4.1 Register, and Sign In

39. Open your web browser and visit http://localhost:3000

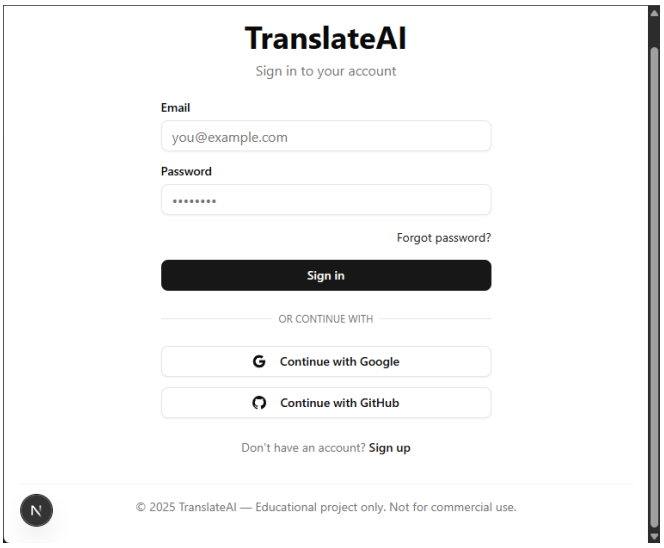

Figure 9. TranslateAI login and registration interface.

40. **Log in** or **register** using your preferred option – **Email/Password**, **Google**, or **GitHub**.
41. To **register** via **email**:
    41.1 Click "**Sign up**"
    41.2 Enter your **Full Name**, **Email** and **Password** in the respective fields.
    41.3 Click "**Sign up**" to confirm.
42. If you **forget** your **password**:
    42.1 Click "**Forgot Password?**"
    42.2 Type your **email** in the respective field
    42.3 Click "**Send reset link**"
    42.4 Click the link in your email to access the landing page.

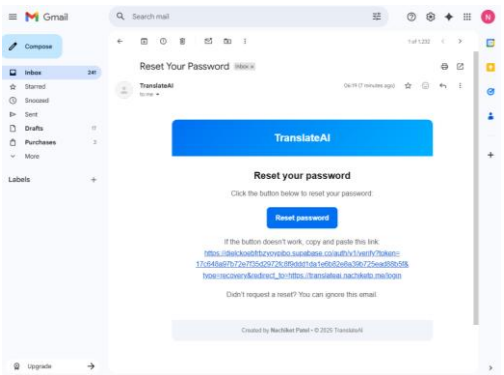

Figure 10. "Reset Password" link sent to the email.

    42.5 See "**Step 72**" within this user manual for further instructions on changing your password.

5. Using TranslateAI Features

5.1 Text Translation

43. Select **Text** mode.
44. Choose the **input language** or leave it as **Auto-Detect**.
45. Choose the **output language**.
46. Type your text in the input box and click **Translate**.
47. The translated results will appear instantly on the right.
48. Click **Copy** to copy the result.

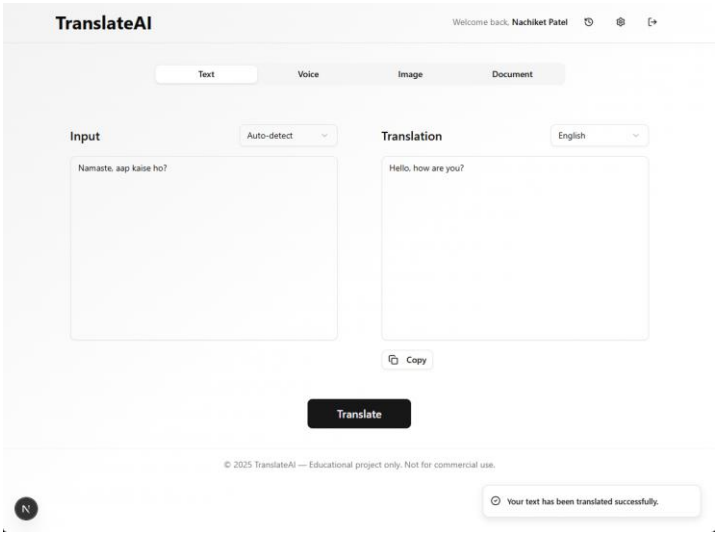

*Figure 11. Successful translation of a text input from **Hindi** to **English**.*

5.2 Voice Translation – Real-Time

49. Select **Voice** mode.
50. Choose the output language.
51. Click **Start Recording**.
52. After finishing, wait about 20 seconds for processing.

53. The transcribed input and its translated output will appear on screen.

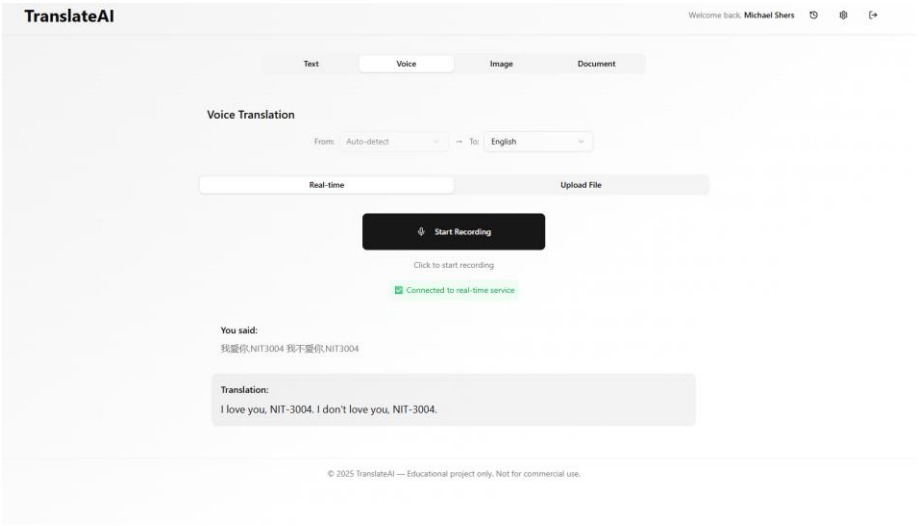

*Figure 12. Successful translation of real-time voice-to-text within the **Real-time** translation UI.*

5.3 Voice Translation – Audio File Upload

54. Choose **Voice** mode.
55. Choose your **output language**.
56. Choose **Upload File**.
57. Supported file types: **MP3, WAV, M4A, FLAC (Max 25 MB)**.
58. Select your audio file and wait a few seconds.
59. The transcript and translation will appear as text.

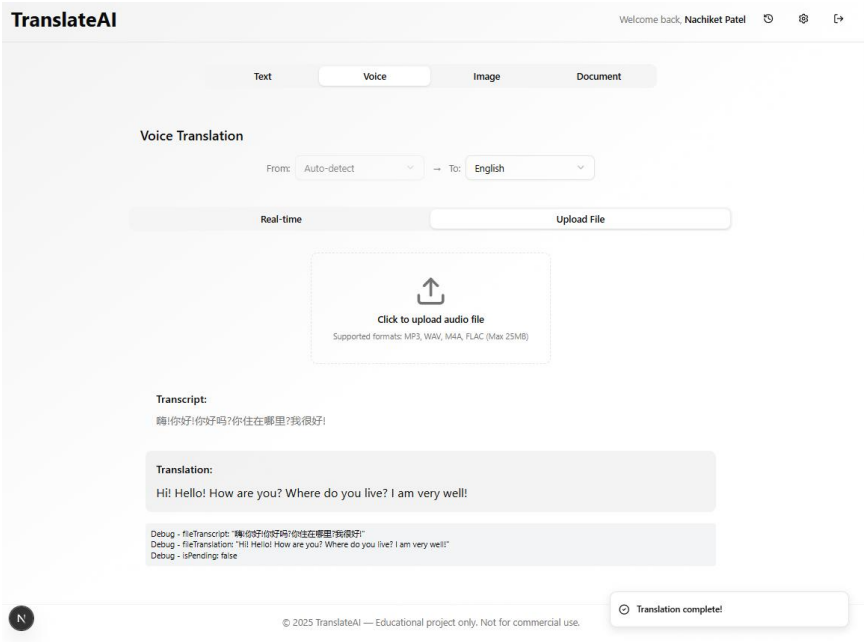

*Figure 13. Successful voice-to-text within the **Upload File** translation UI*

5.4 Image Translation

60. Select **Image** mode.
61. Choose your **output language**.
62. Upload an image using one of the following three options:
    62.1 **Drag and Drop**
    62.2 **Browse your Files**
    62.3 **Paste from Clipboard**
63. Supported image formats: **.jpg, .jpeg, .png, .webp (Max 5 MB).**
64. Once uploaded, the application automatically performs OCR (text extraction) and translation.
65. Both the **original image** and **translated text** will appear on screen.

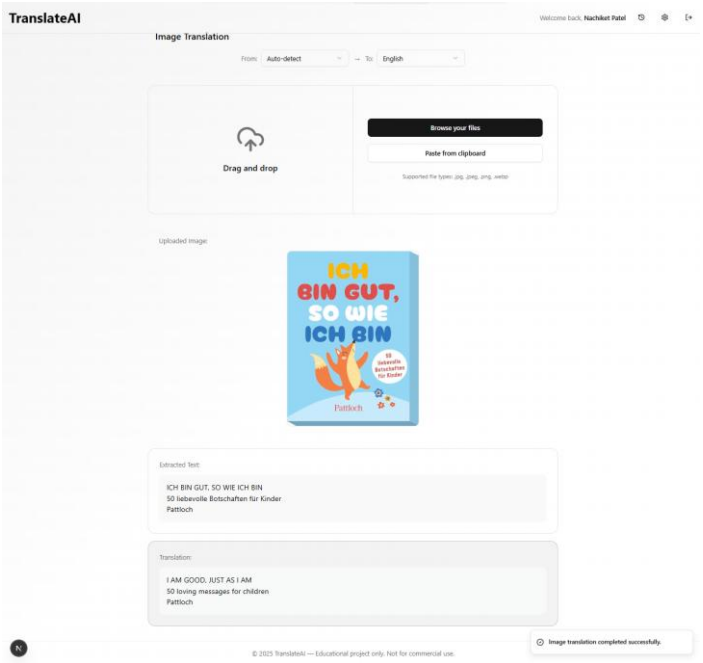

Figure 14. Image translation showing original image, along with the extracted and translated text.

5.5 Document Translation

66. Select **Document** mode.
67. Choose your **output language**.
68. Upload a file using one of the following three options:
    68.1 **Drag and Drop**
    68.2 **Browse your Files**
    68.3 **Paste from Clipboard**
69. Supported file types: **.txt, .md, .csv, .yaml, .yml, .pdf (Max 5 MB).**

70. Once processed, the document name, type, and translated text will be visible.

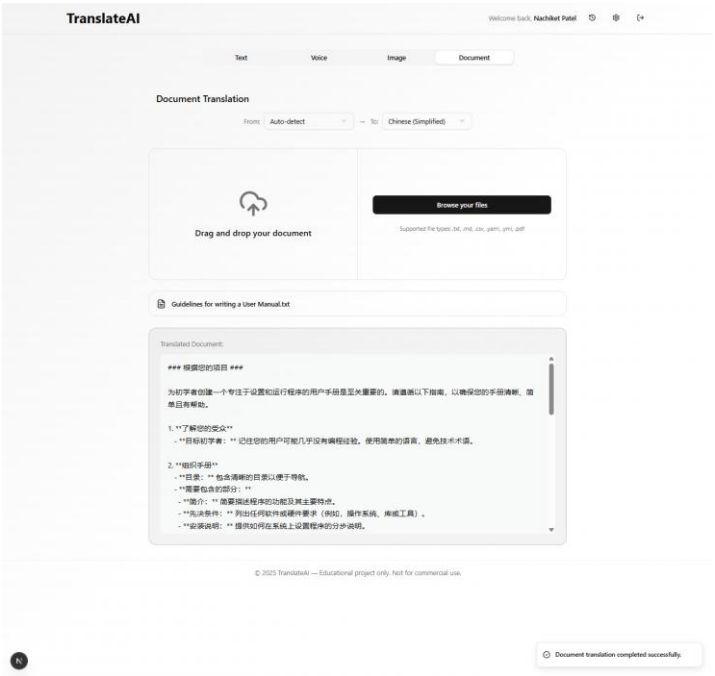

Figure 15. Successfully translated uploaded document.

6. Translation History

71. Click the **History icon** in the navigation bar to view all past translations.

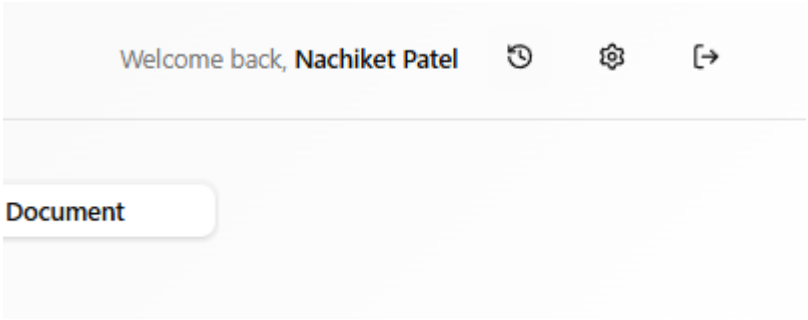

Figure 16. History icon located on the left of the Settings icon.

72. Each record shows:
    72.1 Input type (Text, Real-time, Audio, Image, Document)
    72.2 Date and time
    72.3 Input and output text
73. For file-based translations, only transcribed/translated text is visible (original is not stored).
74. To delete a translation record, click the **red bin icon** beside it.
75. To export all records, click **Export CSV.**
76. To quickly find all specific translations, use the **Search bar** at the top.

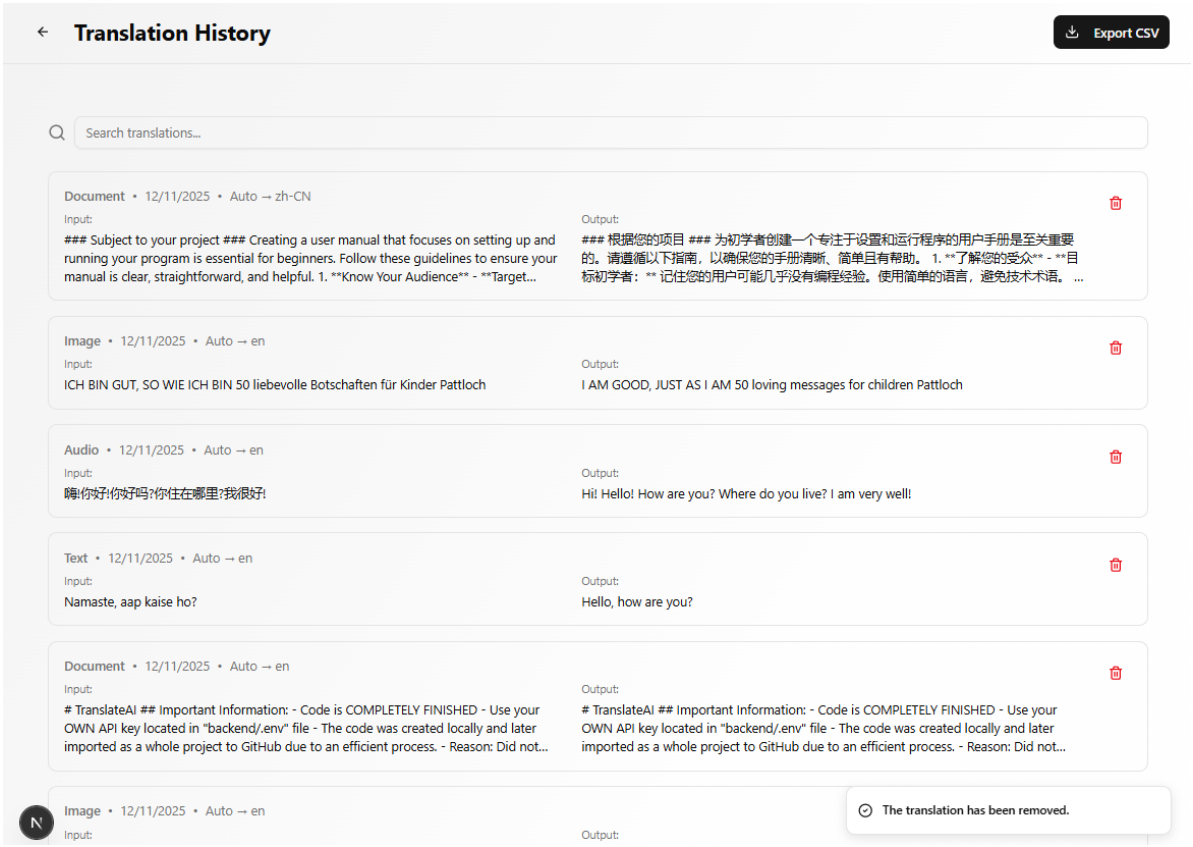

Figure 17. Translation history with search, delete, and export options.

7. Settings and Account Management

7.1 Profile

77. Access the **Settings** tab
78. View your registered email (non-editable)
79. Edit your **Full Name** by clicking it, typing a new name, and clicking **Update Profile**.

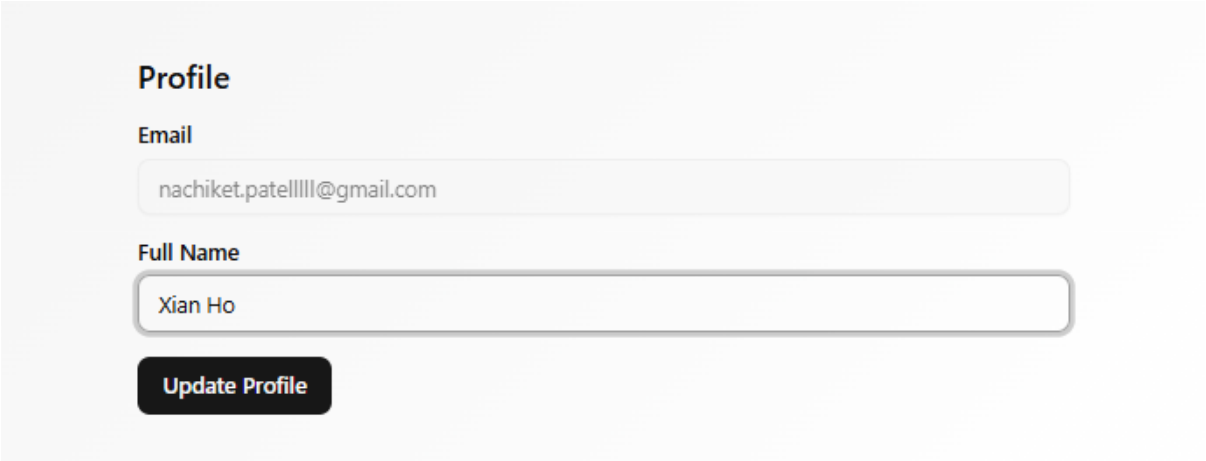

Figure 18. Editing "Full Name" under Profile settings.

7.2 Under **New Password**, enter your new password.

80. Re-type it, under **Confirm your New Password.**
81. Click **Change Password**.

7.3 Reset Password via Email

82. Under **Reset Password via Email,** enter your account email.
83. Click **Send Reset Email**.
84. Check your inbox for the reset link.
85. Follow the instructions.

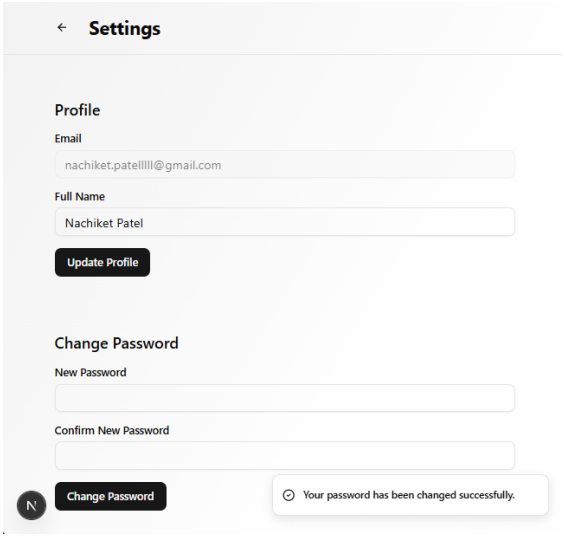

Figure 19. Successfully changed the password in settings.

7.4 Account Deletion (Danger Zone)

86. Under **Danger Zone**, click **Delete Account**.
87. Confirm the deletion in the pop-up window by clicking **Delete Account** again.

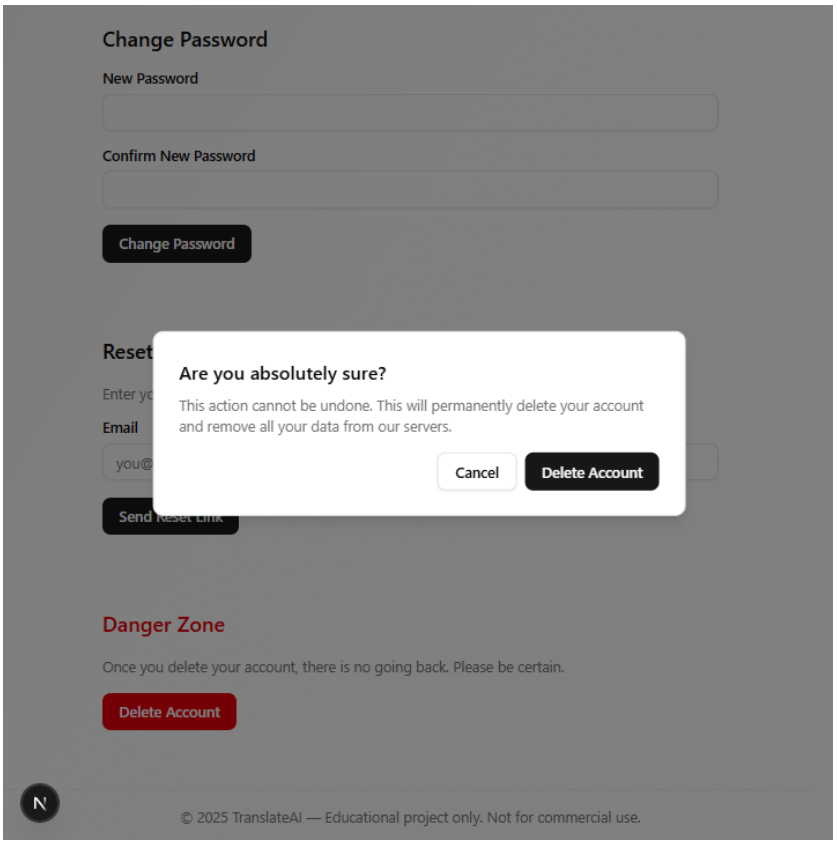

Figure 20. Delete Account pop-up confirmation.

8. Appendix:

8.1 Cloudflare Tunnel for backend:

88. Open **Visual Studio Code**.
89. Go to **Extensions (Ctrl + Shift + X)**.
    89.1 Search for **Cloudflare Tunnel**.
    89.2 Click **Install**.
90. Log in or sign up for a Cloudflare account.
91. Open the Cloudflare Tunnel tab in VSC.
92. Click **Create Tunnel**.
    92.1 Click **New Tunnel**.
93. Set the following:
    93.1 **Port:** 8000
    93.2 **Hostname:** translate-api.nachiketp.me
    93.3 Service Type: HTTP
94. Click **Start Tunnel**.
95. Once connected, your backend will be live at:
    https://translate-api.nachiketp.me
96. Keep this running while using TranslateAI.