1. 介绍 本文档详细描述了翻译应用的各个后端服务接口。接口设计旨在提供清晰、一致的API端点供前端使用，以实现文本翻译、语音合成、语音识别和OCR的功能。

2. 接口规范

2.1 RESTful API 约定 - 使用RESTful规范设计API。 - 方法使用标准HTTP动词（GET, POST, PUT, DELETE）。 - 状态码遵循HTTP标准。 - 数据格式为JSON。

2.2 认证 - API使用Bearer token认证方式。 - 每个请求需要在Header中包含`Authorization: Bearer <token>`来通过安全验证。

2.3 错误处理 - 错误响应也应是JSON格式，包含错误码和错误信息。 3. 翻译服务接口

3.1 翻译文本（Translate Text）

- URL: `/api/translate/text`

- Method\*: POST - Auth required\*\*: Yes

- Data constraints ```json { "source\_language": "[valid source language code]", "target\_language": "[valid target language code]", "text": "[text to translate]" } ```

- Success Response:```json { "translated\_text": "[translated text]", "source\_language": "[source language code]", "target\_language": "[target language code]" } ```

3.2 翻译历史（Translation History）

- URL: `/api/translate/history`

- Method: GET - Auth required: Yes

- Query Parameters: `user\_id`, `limit`, `offset`

- Success Response: ```json [ { "original\_text": "[original text]", "translated\_text": "[translated text]", "source\_language": "[source language code]", "target\_language": "[target language code]", "timestamp": "[timestamp of translation]" }, ... ] ```

4. 语音服务接口

4.1 语音识别（Speech Recognition）

- URL: `/api/speech/recognize`

- Method: POST

- Auth required\*\*: Yes

- Data constraints ```json { "language\_code": "[valid language code]", "audio": "[audio data in base64]" } ```

- \*\*Success Response: ```json { "recognized\_text": "[text recognized from audio]" } ```

4.2 语音合成（Text-to-Speech）

- URL: `/api/speech/synthesize`

- Method: POST

- Auth required: Yes

- Data constraints ```json { "text": "[text to be transformed into speech]", "language\_code": "[valid language code]", "options": { "voice": "[optional voice selection]", "speed": "[optional speed rate]" } } ```

- Success Response: ```json { "audio": "[synthesized speech in base64]", "format": "[audio format, e.g., mp3]" } ```

5. 图像服务接口

5.1 图像文字识别（OCR）

- URL: `/api/ocr/recognize`

- Method: POST

- Auth required: Yes

- Data constraints```json { "language\_hint": "[optional hint for language]", "image": "[image data in base64]" } ```

-Success Response: ```json { "recognized\_text": "[text recognized from image]", "language": "[detected language or empty if not detected]" } ```

6. 设置

6.1 获取翻译设置（Get Translation Settings）

- URL: `/api/settings/translation`

- Method: GET - Auth required: Yes

- Query Parameters: `user\_id`

- Success Response: ```json { "target\_language": "[default target language code]", "voice\_speed": "[default voice speed rate]" } ```

6.2 更新翻译设置（Update Translation Setting

URL: `/api/settings/translation`

- Method: PUT

- Auth required: Yes

- Data constraints ```json { "user\_id": "[user's unique identifier]", "target\_language": "[preferred target language code]", "voice\_speed": "[preferred voice speed rate]" } ```

- Success Response: ```json { "message": "Settings updated successfully." } ```