

# Debug Mode Guide

## Overview

The `--debug` flag enables detailed diagnostic output to help troubleshoot issues with transcription and translation. This is especially useful when translation to Romanian is not working as expected.

## Usage

```
python transcribe_ro.py <audio_file> --debug
```

## What Debug Mode Shows

### 1. Initialization Details

- Python version
- Working directory
- Model name and device
- Translator availability
- Command line arguments

### 2. Model Loading

- Start time
- Loading duration
- Model type
- Success/failure status

### 3. Audio Transcription

- Audio file path
- File size in MB
- Task mode (transcribe/translate)
- Transcription start time
- Transcription duration
- Number of segments detected
- Text length

### 4. Language Detection

- Detected language code (e.g., 'en', 'ro', 'es')
- Language name (e.g., 'English', 'Romanian')
- Language confidence score (if available)
- Number of segments
- Sample of transcribed text (first 200 characters)

## 5. Translation Decision

- Whether translation will be attempted
- Reason for translation or skipping:
- “Translation will be attempted” (different language detected)
- “Audio is already in Romanian” (detected language is ‘ro’)
- “–no-translate flag was set” (user disabled translation)

## 6. Translation Process

- Text length before translation
- Source language
- Translator instance creation
- Translation attempts with retry numbers (1/3, 2/3, 3/3)
- Duration of each attempt
- Result type and length
- Whether result is different from original
- Sample of translated text (first 200 characters)
- Wait times between retries

## 7. Multi-Chunk Translation (for long texts)

- Number of chunks
- Size of each chunk
- Progress through chunks
- Individual chunk translation status

## 8. File Writing

- Output path (relative and absolute)
- Output format
- Output directory status
- Metadata details
- Write duration
- File size in KB
- File existence confirmation

## 9. Error Handling

- Full exception type
- Exception details
- Complete stack trace
- Context where error occurred

## 10. Summary

- Total processing time
- Detected language
- Output file path
- Transcription length
- Translation length
- Whether translation changed the text

## Example Debug Output

```

2026-01-12 14:04:00.530 [DEBUG]
=====
2026-01-12 14:04:00.530 [DEBUG] DEBUG MODE ENABLED - Detailed output will be shown
2026-01-12 14:04:00.530 [DEBUG] =====
=====
2026-01-12 14:04:00.530 [DEBUG] Model name: tiny
2026-01-12 14:04:00.530 [DEBUG] Device: cpu
2026-01-12 14:04:00.530 [DEBUG] Translator available: True
2026-01-12 14:04:00.530 [DEBUG] Python version: 3.11.6 (main, Dec 9 2025, 11:42:39)
[GCC 12.2.0]

2026-01-12 14:04:02.024 [DEBUG] Model loaded in 1.49 seconds

2026-01-12 14:04:02.025 [DEBUG] =====
=====
2026-01-12 14:04:02.025 [DEBUG] STEP: LANGUAGE DETECTION RESULTS
2026-01-12 14:04:02.025 [DEBUG] =====
=====
2026-01-12 14:04:02.025 [DEBUG] Detected language code: en
2026-01-12 14:04:02.025 [DEBUG] Language name: English
2026-01-12 14:04:02.025 [DEBUG] Transcription sample (first 200 chars): 'Hello, this
is a test...'

2026-01-12 14:04:02.025 [DEBUG] =====
=====
2026-01-12 14:04:02.025 [DEBUG] STEP: TRANSLATION DECISION
2026-01-12 14:04:02.025 [DEBUG] =====
=====
2026-01-12 14:04:02.025 [DEBUG] Translate flag: True
2026-01-12 14:04:02.025 [DEBUG] Detected language: en
2026-01-12 14:04:02.025 [DEBUG] Is Romanian: False
2026-01-12 14:04:02.025 [DEBUG] DECISION: Translation will be attempted
2026-01-12 14:04:02.025 [DEBUG] REASON: translate=True and detected_language='en' != 'ro'

2026-01-12 14:04:03.125 [DEBUG] Translation attempt 1/3 started
2026-01-12 14:04:03.125 [DEBUG] Creating GoogleTranslator(source='auto', target='ro')
2026-01-12 14:04:04.532 [DEBUG] Translation call completed in 1.41 seconds
2026-01-12 14:04:04.532 [DEBUG] Translation sample (first 200 chars): 'Bună, acesta
este un test...'

```

## Troubleshooting with Debug Mode

### Problem: Translation Not Working

Check these debug outputs:

#### 1. Translator availability

```

[DEBUG] Translator available: True
If False, install deep-translator: pip install deep-translator

```

#### 2. Translation decision

```

[DEBUG] DECISION: Translation will be attempted
If it says "skipped", check the reason

```

### 3. Translation attempts

```
[DEBUG] Translation attempt 1/3 started
[DEBUG] Translation call completed in 1.41 seconds
Check if attempts are failing with errors
```

### 4. Translation result

```
[DEBUG] Original != Translated: True
[DEBUG] Translation sample (first 200 chars): ...
Check if the translation is actually different
```

## Problem: Transcription Failing

Check these debug outputs:

### 1. Model loading

```
[DEBUG] Model loaded in 1.49 seconds
[DEBUG] Model type: <class 'whisper.model.Whisper'>
```

### 2. Audio file

```
[DEBUG] Audio file: test.mp3
[DEBUG] File size: 2.45 MB
```

### 3. Error details

```
[DEBUG] FULL EXCEPTION DETAILS
[DEBUG] Traceback (most recent call last):
...
...
```

## Problem: Wrong Language Detected

Check these debug outputs:

### 1. Language detection

```
[DEBUG] Detected language code: en
[DEBUG] Language name: English
[DEBUG] Language confidence: 0.9823
```

### 2. Transcription sample

```
[DEBUG] Transcription sample (first 200 chars): ...
Verify the transcription looks correct
```

## Performance Monitoring

---

Debug mode shows timing for each step:

- **Model loading:** How long it takes to load the Whisper model
- **Transcription:** How long it takes to transcribe the audio
- **Translation:** How long each translation attempt takes
- **File writing:** How long it takes to write the output file
- **Total time:** Overall processing time

## Tips

---

1. **Always use `--debug` when troubleshooting** - It provides crucial information

## 2. Save debug output - Redirect to a file:

```
python transcribe_ro.py audio.mp3 --debug > debug.log 2>&1
```

## 3. Check timing - Helps identify slow steps

## 4. Look for “REASON” - Shows why decisions were made

## 5. Check samples - Text samples help verify correct operation

# When to Use Debug Mode

- Translation is not working
- Wrong language is detected
- Process is taking too long
- Getting errors or exceptions
- Want to understand what's happening
- Reporting bugs or issues
- Normal production use (creates verbose output)

# Disabling Debug Mode

Simply remove the `--debug` flag for normal operation:

```
python transcribe_ro.py audio.mp3
```

# Debug Log Format

Debug messages include:

- **Timestamp:** YYYY-MM-DD HH:MM:SS.mmm (with milliseconds)
- **Level:** [DEBUG]
- **Message:** Descriptive information
- **Separators:** === for major steps, ---- for subsections

# Getting Help

If you're still having issues after reviewing debug output:

1. Save the debug log
2. Check the troubleshooting section in README.md
3. Review TRANSLATION\_FIX\_SUMMARY.md
4. Open an issue with the debug log attached