



CashTrax User Guide

CashTrax Web Application & CashTrax Chrome Extension

Financial Fraud & Counterfeit Currency Investigation Platform

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Part I — CashTrax Web Application

1. Overview

CashTrax is a specialized investigative web application for financial fraud and counterfeit currency investigations. Analysts use it to review, annotate, and report on suspicious online listings (e.g., prop money, counterfeit bills on e-commerce sites).

Technology Stack

LAYER	TECHNOLOGY
Framework	TypeScript · Remix · React 18


UI	Material UI v5 · D3.js (network graphs)
Database	MongoDB (direct driver, no ORM)
Auth	Azure AD via remix-auth-microsoft
Export	pdf-lib (PDF) · xlsx / custom CSV
Monitoring	prom-client (Prometheus metrics)

2. Authentication & Roles

CashTrax uses **Azure Active Directory** for login. Users must have the `CASH_TRAX` application enabled in their BrandTrax profile.

User Roles

ROLE	VIEW	CREATE	EDIT	DELETE	ADMIN
client	✓	—	—	—	—
analyst	✓	✓	✓	—	—
manager	✓	✓	✓	✓	—
admin / god	✓	✓	✓	✓	✓

 Users are scoped to specific **currency brands** (e.g., USD, EUR, CAD). An analyst assigned to CAD and USD will only see findings tagged with those currencies.

3. Dashboard

The dashboard (`/dashboard`) is the analytics home page providing:

- **KPI cards** — Total findings, risk distribution, platform breakdown
- **Charts** — Trends over time, categorization, enforcement metrics
- **Filter drawer** — Filter by brand/currency, date range, risk level, status, platform, category
- **Sortable findings table** — All findings matching current filters
- **Export buttons** — Generate PDF report or download CSV (filters are applied to exports)

4. Findings Queue

The findings queue (`/findings`) is the primary analyst workspace.

Layout


- **Left sidebar:** Scrollable list of findings with infinite scroll, showing title, risk level, and status
- **Detail pane (right):** Full finding details organized in tabs

Detail Tabs

TAB	CONTENT
Overview	Summary, risk level, classification, estimated value, key metadata
Images	Listing images and screenshots with gallery viewer
Seller Info	Seller name, location, country, rating, contact details, store URL
Analysis	AI analysis results: confidence score, classification, keywords, sentiment, language
Network	D3.js interactive network graph showing seller connections and associated domains
Complaint	Complaint/enforcement information: infringement type, IPR, filing status, takedown
Notes	Analyst notes and annotations (analysis, action, comment, escalation types)

5. Creating a New Finding — Complete Field Reference

Findings can be created manually at `/findings/new` or imported from the Chrome extension. The form is organized into clearly labeled sections on the page. Below is a detailed, section-by-section reference matching the exact form layout.

 **Tip:** Fields marked with * are required. When importing from the Chrome extension, most fields are pre-populated by the AI analysis — review and adjust before saving.

5.1 — Basic Information

The top section of the form. If AI analysis data is available (e.g., from an extension import), a

AI Analysis Available chip appears next to the heading.

FIELD LABEL	TYPE	REQ?	DESCRIPTION & GUIDANCE
Finding Title *	Text	Yes	A short descriptive title for the finding. Typically the listing title from the marketplace (e.g., "TOP Movie-prop-money-canadian Souvenir Clear Polymer"). Appears in the findings queue sidebar and reports.
Subcategory	Text	No	Free-text field for additional classification detail. Examples: <code>movie_props</code> , <code>social_media</code> , <code>collectible_currency</code> , <code>bulk_sales</code> .
Risk Level *	Dropdown	Yes	Overall risk assessment of the finding.  Likely legitimate or minimal risk  Some suspicious indicators — needs review  Strong indicators of fraud/counterfeiting  Clear evidence of criminal activity
Created By	Dropdown	No	The user who created this finding. Auto-populated from login; can be changed by admins. Dropdown lists CashTrax-eligible users who share currency brands with the current user.
Priority *	Dropdown	Yes	Investigation urgency.  Review when time permits  Standard workflow  Review promptly  Immediate attention required
Primary Currency (Brand) *	Dropdown	Yes	The primary ISO 3-letter currency code (e.g., <code>CAD</code> , <code>USD</code> , <code>EUR</code>). This is the key access-control field — only analysts assigned to this currency brand can view the finding. Choose the currency that is the primary target of the counterfeiting.
Client Name	Text	No	The client or brand name associated with this currency (e.g., "Bank of Canada", "Federal Reserve"). Resolved from the store brands API if available.
Currencies	Multi-select (chips)	No	All currency codes involved in this finding (can be multiple). Select all currencies found in the listing. Supported codes: CAD, USD, EUR, GBP, JPY, AUD, CHF, CNY, INR, BRL, MXN, KRW, SGD, HKD, NZD, SEK, NOK, DKK, PLN, CZK, HUF, RUB, TRY, ZAR, THB, MYR, IDR, PHP, VND, EGP, DNR, AED, SAR, QAR.

Status	Dropdown	Yes	<p>Workflow status of the finding.</p> <ul style="list-style-type: none"> New Newly created, not yet reviewed Under Review Being reviewed by analyst Investigating Active investigation Escalated Escalated to senior/law enforcement Resolved Investigation completed Closed No further action False Positive Determined legitimate
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5.2 — Seller Information

Details about the seller/vendor on the marketplace platform.

FIELD LABEL	TYPE	REQ?	DESCRIPTION & GUIDANCE
Seller Name *	Text	Yes	The display name of the seller as shown on the marketplace (e.g., "Shenzhen Longgang District Jiawei Paimao Trading Firm").
Location	Text	No	Seller's stated location (e.g., "Guangdong, China", "Toronto, ON").
Email	Email	No	Seller's contact email address. Validated as email format.
Phone	Text	No	Seller's phone number, including country code (e.g., <code>+86 755 1234 5678</code>).
Social Media	Repeatable rows	No	<p>Each row has two fields:</p> <ul style="list-style-type: none"> • Platform — free-text platform name (e.g., <code>telegram</code>, <code>whatsapp</code>, <code>wechat</code>, <code>qq</code>, <code>facebook</code>, <code>instagram</code>) • Value — the handle, username, or number on that platform <p>Click "Add Social Media" to add more rows. Use the X button to remove a row.</p>
Store URL	URL	No	Link to the seller's store page on the marketplace (e.g., <code>https://alibaba.com/store/jiawei-paimao</code>).
Website	URL	No	Seller's own website outside the marketplace (e.g., <code>https://jiawei-paimao.com</code>).
Seller Rating	Number	No	Platform rating, decimal (e.g., <code>4.4</code> , <code>2.1</code>). Helps assess seller credibility.
Review Count	Number	No	Total number of reviews the seller has on the platform.

Active Since	Text	No	When the seller became active (e.g., <code>2023-01-01</code>). New sellers are a risk indicator.
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5.3 — Listing Information

Details about the specific online listing being investigated.

FIELD LABEL	TYPE	REQ?	DESCRIPTION & GUIDANCE
Listing Title *	Text	Yes	The exact title of the listing as it appears on the marketplace. Copy-paste from the page for accuracy.
Description	Textarea (multiline, 4 rows)	No	The full listing description text from the marketplace. Include the complete text — it's used for AI keyword extraction and analysis.
URL *	URL	Yes	Full URL of the listing (e.g., <code>https://www.alibaba.com/product-detail/...</code>). The Domain field is automatically extracted from this URL (stored as a hidden field).
Tags	Text (comma-separated)	No	Free-form tags for categorization and search. Enter comma-separated values (e.g., <code>prop_money, canadian_currency, bulk_operation, high_risk</code>).
Listing Status	Dropdown	No	Current status of the listing on the marketplace: <code>active</code> — listing is live <code>inactive</code> — listing is unlisted/hidden <code>removed</code> — listing has been removed <code>suspended</code> — seller/listing suspended by platform
Estimated Value	Number (decimal)	No	Estimated total monetary value of the finding (e.g., face value of all counterfeit bills). Accepts decimal values (step 0.01).
Estimated Value Currency	Dropdown	No	Currency code for the estimated value field. Select from the same list of 30+ ISO currency codes.

5.4 — AI Analysis Information



These fields are typically **auto-populated by the AI service** when importing from the Chrome extension. Analysts can review and manually edit any field.

FIELD LABEL	TYPE	REQ?	DESCRIPTION & GUIDANCE
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AI Summary	Textarea (4 rows)	No	AI-generated narrative summary of the finding. Editable — analysts can refine or replace the AI text. The original AI summary is separately preserved in the <code>aiAnalysis.summary</code> field. <i>Helper text: "This field can be populated by AI analysis or manually entered"</i>
AI Confidence Score	Number (0–100)	No	AI's confidence in its classification. Accepts values in two formats: <ul style="list-style-type: none"> • Decimal (0–1): e.g., <code>0.85</code> — auto-converted to 85% • Percentage (0–100): e.g., <code>85</code> Supports up to 2 decimal places. Higher values indicate stronger AI confidence.
AI Classification	Text	No	The category determined by the AI model (e.g., <code>counterfeit_currency</code> , <code>prop_money</code> , <code>legitimate_collectible</code>). Free-text — not limited to the finding category dropdown values.
AI Sentiment	Dropdown	No	Sentiment detected by AI analysis of the listing text: <code>Not Set</code> — no analysis performed <code>Negative</code> — listing language suggests suspicious/fraudulent intent <code>Neutral</code> — no strong indicators either way <code>Positive</code> — listing appears legitimate
Detected Language	Text	No	ISO language code detected by AI (e.g., <code>en</code> for English, <code>zh</code> for Chinese, <code>fr</code> for French).
AI Keywords	Text (comma-separated)	No	Keywords extracted by the AI from the listing content. Enter as comma-separated values (e.g., <code>counterfeit, currency, fraud, prop money</code>). Used for search and pattern detection.

5.5 — Currency Bundles (Expandable Accordion)

This section appears as a collapsible accordion titled "**Currency Bundles (N)**" where N is the count. Each bundle represents a specific denomination/currency being sold in the listing. The header shows how many bundles are "valid" (have all required fields filled).

 **Default:** A new finding starts with one empty bundle (CAD \$100 × 1 bill). Click "**Add Bundle**" to add more. Use the  delete icon to remove a bundle (minimum 1 required).

Each bundle card contains:

FIELD LABEL	TYPE	DESCRIPTION & GUIDANCE
Currency	Dropdown	ISO 3-letter currency code for this specific bundle (e.g., CAD , USD , EUR). A finding can have multiple bundles with different currencies.
Denomination	Number	Face value of the bill or coin (e.g., 100 for a \$100 bill, 50 for a €50 note). Enter the numeric value only.
Quantity	Number	Number of bills/coins/pieces in this bundle (e.g., 100 means 100 bills of the specified denomination).
Unit	Dropdown	How items are packaged: bill — individual bills coin — individual coins set — a set of items bundle — a bundled package pack — a pack pcs — pieces
Price Amount	Number	The asking/selling price for this bundle (e.g., 19.99). This is what the seller is charging, <i>not</i> the face value.
Price Currency	Dropdown	Currency in which the price is listed (often different from the counterfeit currency — e.g., a CAD \$100 bundle may be priced in USD).
Minimum Order Quantity	Text	The seller's minimum order quantity, free-text (e.g., 1 pack , 50 sets , 100 bills). Bulk MOQ is a risk indicator.
Type of Bill	Dropdown	Classification of what is being sold: Prop Money Bills for movies, TV, or novelty use Bank Note Reproduction of official bank notes Sovereign Note Government-issued note reproduction Raw Materials Materials for manufacturing counterfeit currency Other (Specify) Other classification
Quality	Dropdown	Assessed reproduction quality: High — very close to genuine, hard to detect Medium — some noticeable differences Low — obvious fake, poor printing
Printing Method	Dropdown	How the item was printed/manufactured: Offset — standard commercial printing Intaglio — raised-ink method (used in genuine currency) Digital — digital/inkjet printing (most common for fakes) Unknown — cannot determine

Security Features	Text (comma-separated)	Security features present on the counterfeit. Enter comma-separated values. Common values: <code>hologram</code> , <code>watermark</code> , <code>security_thread</code> , <code>microprinting</code> , <code>color_shifting_ink</code> , <code>UV_features</code> , <code>basic_printing</code> .
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5.6 — Infringement Information



Legal and complaint details for enforcement actions.

FIELD LABEL	TYPE	REQ?	DESCRIPTION & GUIDANCE
Type of Infringement	Multi-select (chips)	No	Select one or more legal/IP classifications. Multiple selections appear as chips: <ul style="list-style-type: none"> Trademark Unauthorized use of trademarks Design Copying protected designs Copyright Copyright violation Patent Patent violation Trade Dress Copying overall look/feel Other Other classification
IPR Reference	Text	No	Intellectual Property Rights reference number or complaint ID. Typically a complaint reference value used for tracking (e.g., <code>1234567890</code>). <i>Helper text: "Typically a complaint ID reference value"</i>
Infringement Description	Textarea (3 rows)	No	Detailed description of the complaint or infringement. Explain what IP rights are being violated and how (e.g., "Seller producing counterfeit CAD \$100 polymer notes with security features").
Complaint Filed Date <i>(edit mode only)</i>	Date picker	No	The date when the complaint was officially filed with the marketplace or authorities. Only visible when editing an existing finding (not on the new finding form).
Take Down Date <i>(edit mode only)</i>	Date picker	No	The date when the listing was removed/taken down (if applicable). Used for compliance reporting. Only visible when editing an existing finding.
Filed By	Dropdown	No	The user who filed the complaint. Dropdown of CashTrax-eligible users.
Remarks	Text	No	Additional notes, observations, or context about the complaint (e.g., "Seller claims this is for movie props but appears to be counterfeit").

5.7 — Listing Images (Expandable Accordion)

Accordion section titled "**Listing Images (N)**". These are the *product photos* from the marketplace listing. Auto-expanded when images are pre-populated from the extension.

FIELD LABEL	TYPE	DESCRIPTION & GUIDANCE
Source URL	URL	The original image URL from the marketplace listing. Paste the URL, then click the " Accept " button to download and cache a copy on the CashTrax images server. Once accepted, a green Accepted chip appears and the Accept button is disabled. <i>Helper text: "Required when adding an image: paste a URL, then click Upload so the auto-generated Image URL field is populated"</i>
Upload Image File	File upload button	Alternative to Source URL — click to select an image file from your computer. The file is uploaded to the images API and the Image URL is auto-populated.
Image URL	URL (auto-generated)	The stored/cached image URL. Auto-populated when you click Accept on a Source URL or upload a file. This is the permanent URL used in reports.
Alt Text	Text	Descriptive text for the image. Used in PDF reports and accessibility (e.g., "Close-up of counterfeit watermark feature", "Front of CAD \$100 prop bill").


 Click "**Add Image**" to add more image cards. A preview thumbnail appears once the image is accepted/uploaded. Use the  button to remove an image card.

5.8 — Screenshots (Expandable Accordion)

Accordion section titled "**Screenshots (N)**". These are *evidence screenshots* — captured page snapshots of the listing for the investigation record. The Chrome extension auto-captures these.

FIELD LABEL	TYPE	DESCRIPTION & GUIDANCE
Source URL	URL	The original screenshot source URL (typically the page URL that was captured). Click " Accept " to cache a local copy, or upload a file directly.
Upload Screenshot File	File upload button	Upload a screenshot file from your computer. Auto-populates the Screenshot URL.



Screenshot URL	URL (auto-generated)	The stored/cached screenshot URL. Auto-populated on Accept or file upload.
Alt Text	Text	Descriptive text (e.g., "Full page screenshot of Alibaba listing", "Seller profile and store information").

 Same controls as Listing Images: **Add Screenshot**, **Accept**, **Upload**, and **Delete** buttons. When imported from the Chrome extension, screenshots are auto-populated with the captured page image.

5.9 — Notes (Expandable Accordion)

Accordion section titled **"Notes (N)"**. Each finding can have multiple analyst notes tracking the investigation history.

FIELD LABEL	TYPE	DESCRIPTION & GUIDANCE
Note Type	Dropdown	Categorizes the note for filtering and reporting: <ul style="list-style-type: none"> analysis Analytical observation about the finding action An action that was taken (e.g., contacted seller, filed complaint) comment General comment or discussion escalation Escalation to a senior analyst, manager, or law enforcement
Author	Dropdown	The user who authored this note. Dropdown lists CashTrax-eligible users. Auto-set to the current logged-in user, but can be changed.
Note Content	Textarea (3 rows)	The note text. Document observations, actions taken, or decisions (e.g., "Initial finding — price is suspiciously low for legitimate prop money. Seller has poor feedback.").

 Click **"Add Note"** to append a new note. Each note is stored with author and auto-recorded timestamp. Use the  button to remove a note (minimum 1 required).

5.10 — Form Actions

BUTTON	DESCRIPTION
Create Finding / Update Finding	Saves the finding to MongoDB. On create, generates a new document. On edit, updates the existing document. The button label changes based on mode.

Cancel

Discards changes and navigates back to the findings queue.

🔌 5.11 — Importing from Chrome Extension

i When the CashTrax Chrome Extension sends a finding, the web app shows a **"Chrome Extension Import Dialog"**. Clicking **"Import"** navigates to `/findings/new?imported=true&data=<JSON>` with most fields pre-populated from the AI analysis:

- **Finding Title** ← listing title
- **URL & Domain** ← page URL
- **Listing Title & Description** ← extracted page content
- **AI Summary, Confidence, Classification, Sentiment, Language, Keywords** ← AI service response
- **Screenshots** ← auto-captured page screenshot
- **Listing Images** ← extracted from page DOM
- **Seller fields** ← pre-extracted from marketplace definition (if available)

Review all fields, add bundles and notes, adjust risk/priority, then click **Create Finding**.

📄 6. PDF & CSV Export

PDF Report

- Generated server-side using `pdf-lib`
- Accessible via `/dashboard/report` or the export button on the dashboard
- Multi-page report with summary, trends, metrics, and enforcement/platform breakdowns
- Respects all dashboard filters (date range, brand, risk, status, etc.)
- Downloads as `cashtrax-report.pdf`

CSV Export

- Accessible via `/dashboard/export-csv` or the CSV button on the dashboard
- Columns include: Brand Name, Platform, Country, Platform Type, Seller fields, Listing fields, Denomination, Currency, Price, Quantity, Infringement columns, Complaint/Takedown/Comment
- Respects all dashboard filters



Part II — CashTrax Chrome Extension



7. Extension Overview

The **CashTrax Extension** (v1.1.0) is a Chrome Manifest V3 companion extension that:

1. **Captures** page data (DOM, images, metadata) and takes screenshots
2. **Analyzes** pages using AI via `POST /api/v1/ai/analyze-webpage`
3. **Imports** findings directly into the CashTrax web application
4. **Pre-extracts** structured data from known marketplace domains using scraper definitions



8. Installation

The extension is a plain Chrome extension (no build step):

1. Open Chrome → navigate to `chrome://extensions/`
2. Enable **Developer mode** (toggle in top-right)
3. Click **Load unpacked**
4. Select the `cashtrax-extension` folder
5. The CashTrax icon appears in the toolbar



9. Configuration (Options Page)

Right-click the extension icon → **Options**:

SETTING	VALUES	DESCRIPTION
Environment	<code>local</code> , <code>dev</code> , <code>prod</code>	Selects the API base URL: <code>local</code> → <code>http://localhost:8000</code> <code>dev</code> → <code>https://api.brandtrax.authentix.dev</code> <code>prod</code> → <code>https://api.brandtrax.authentix.com</code>
API Key	JWT string	Bearer token for authenticating with the BrandTrax API

Click **Save Settings** to persist. Use **Test Connection** to verify the API is reachable.

10. Usage Workflow

Step 1: Navigate to a Suspicious Page

Open any webpage you want to investigate (e.g., an e-commerce listing selling counterfeit currency).

Step 2: Click the Extension Icon (Popup)

The popup opens with an **"Analyze Page"** button.

Step 3: Analyze Page

Clicking "Analyze Page" performs:

- **Screenshot capture** — visible tab screenshot uploaded to the images API
- **DOM extraction** — URL, title, page text (trimmed), up to 10 images, metadata
- **Marketplace pre-extraction** — if a scraper definition exists for this domain, structured fields (title, price, seller) are pre-extracted
- **Local keyword detection** — scores suspicious terms (counterfeit, fake money, prop money, etc.) for a quick risk indicator

Step 4: Send to AI

Click **"Send to AI"** to submit page data to the AI analysis service:

- Endpoint: `POST /api/v1/ai/analyze-webpage`
- Sends: page content, image URLs, metadata, pre-extracted fields
- Returns: risk level, evidence, classification, recommended action, confidence score

Step 5: Import to CashTrax

Click **"Import to CashTrax"**:

1. Extension finds or opens the CashTrax tab
2. Sends a `NEW_FINDING` message via `postMessage`
3. CashTrax shows the **Chrome Extension Import Dialog**
4. Click **Import** to navigate to the new finding form, pre-filled with AI data



11. Permissions

PERMISSION	WHY
<code>activeTab</code>	Capture screenshot of current tab
<code>storage</code>	Persist settings (environment, API key) via <code>chrome.storage.sync</code>
<code>tabs</code>	Find/open CashTrax tab for import
<code>scripting</code>	Inject content script into CashTrax tab if not already loaded
<code><all_urls></code>	Content script needs to extract page data from any website

CashTrax Web App Detection

The extension detects CashTrax running at:

- `http://localhost:3000` (local)
- `https://currency.brandtrax.authentix.dev` (dev)
- `https://currency.brandtrax.authentix.com` (prod)

On CashTrax pages, the content script adds a `#cashtrax-extension-marker` element and `window.cashTraxExtension` flag, and sends periodic `status` / `heartbeat` messages so the web app can show "extension connected" in the top nav.

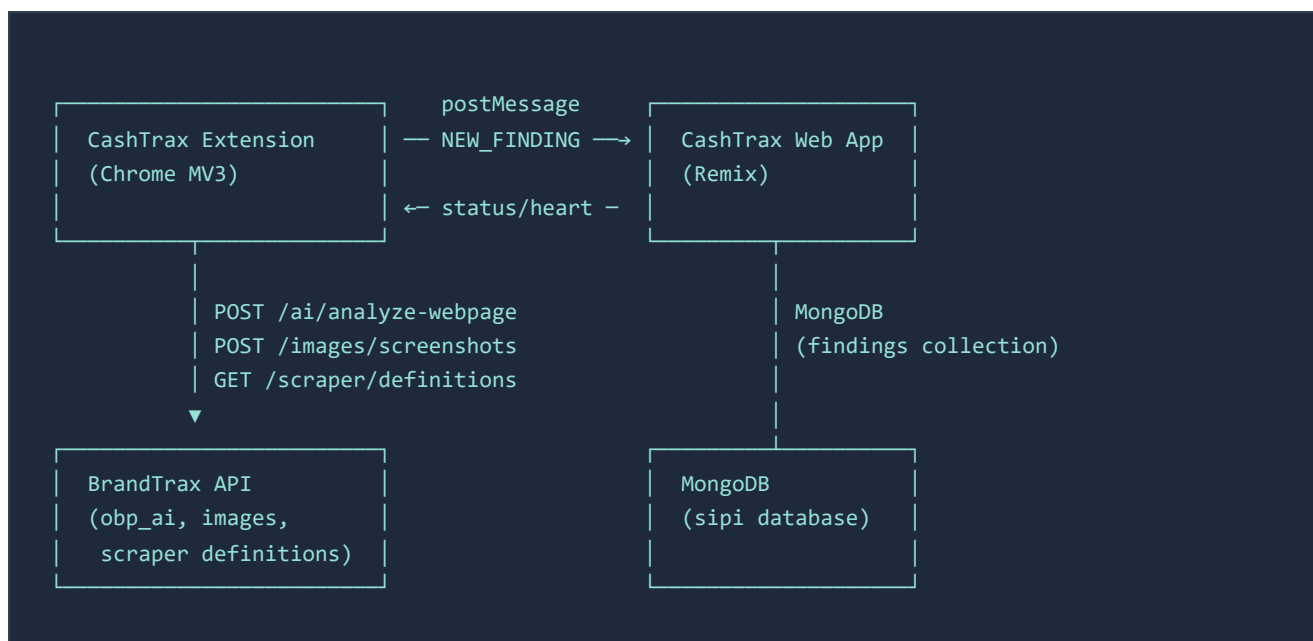


12. Troubleshooting

ISSUE	SOLUTION
Extension icon grayed out	Ensure Developer mode is enabled and the extension is loaded at <code>chrome://extensions/</code>
"Not connected" in CashTrax	Check that the extension is enabled; reload the CashTrax page
AI analysis fails	Verify API key in Options; check environment setting matches your backend; use "Test Connection"
Screenshot upload fails	Ensure the API is reachable; check Bearer token validity

Import button does nothing	Make sure CashTrax is open in a tab; check browser console for errors
"Analyze" shows no data	Some pages block content script injection. Try refreshing the page, or check if the site uses strict CSP

13. End-to-End Data Flow



— End of User Guide —

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