

Scale AI Take Home

Smart Claims Portal



TL;DR — Streamlined claim view with AI-powered damage and cost assessment to optimize claim intake to repair authorization.

Vision

Problem Statement

Car insurance claims assessment today is slow, inconsistent, and expensive due to (1) manual photo review, and (2) subjective judgment of estimates.

Our Solution

Our vision is to streamline claim intake to repair authorization by **displaying only what's necessary for decision making**, as well as **augmenting claims agents with AI-powered damage assessment**. Our goal is to improve speed, accuracy, and consistency, without removing human accountability.

Automated Claim enables agents to focus on review, decision-making, and edge cases, while AI handles the repetitive and error-prone aspects of visual damage review and cost estimation.

Goals

- Reduce average claim assessment time
- Increase consistency of repair estimates
- Lower operational cost per claim
- Improve claims agent productivity and confidence
- Maintain regulatory compliance and auditability

Non-Goals

- Initial claim report or repair flows
- Fully autonomous claim approval
- Repair shop negotiation or pricing enforcement
- Fraud detection (out of scope for MVP)
- Replacing human claims agents or adjusters

Core Flow

<https://www.figma.com/board/7iKwt0ge5DvmYzeDceObuq/Untitled?node-id=0-1&t=AHAtAILfXeEhhEKY-1>

User Stories

- As a claims agent, I want to see **necessary policyholder information**, so I can proceed with the claim action.
- As a claims agent, I want to **upload additional images or videos** on the policyholder's behalf, so I can proceed with all information related to the claim.
- As a claims agent, I want AI to identify **damage types and severity** so I can reduce manual review time.
- As a claims agent, I want to **edit AI damage entry and severity, or add or delete damage entries entirely**, so I remain accountable for the final decision.
- As a claims agent, I want an editable, AI-generated **repair cost estimate** (total and itemized) so I can produce estimates faster.
- As a claims agent, I want to **submit the claim for approval to a senior adjuster** so I can ensure the estimate is reviewed and authorized before repairs proceed.
- As a claims agent, I want the claim to **close once the senior adjuster reviews and sends an RA (Repair Authorization)** to the policyholder.
 - if not approved, claim and correction notes go back to agent workflow to be edited
- As a claims agent, I want to **request more photos** from the policyholder so I can submit the most accurate claim possible.

Key Features + AI Overview

Claim Header

We want to streamline the claim agent's view so they can make a decision as quick as possible.

- Crucial policyholder info: Policyholder name, Policy Number, Incident Date, Vehicle (and VIN), Claim Type, Coverage Limit, and Photo Evidence
- Crucial claim info: ID and Statuses, including:

- Assessment in progress == UNDER REVIEW
- Claim submitted for approval == PENDING
- Claim approved by adjuster == APPROVED
- Review Authorization sent to policyholder == CLOSED

2. Damage Type & Severity Detection

- **Objective:** Automatically identify vehicle damage from uploaded photos or video.
- **How it works:**
 - Computer vision model 'Bumper AI' (ex. a convolutional neural network or transformer based vision model) scans uploaded images.
 - Detects **damage types**: dents, scratches, broken lights, bumper deformation, etc.
 - Predicts **severity**: minor, moderate, or severe based on deformation depth, surface area affected, and location.
 - Occurs as soon as policyholder uploads media. Assessment can be re-ran at any point during review.
 - Confidence scores are generated for each damage detection to indicate AI certainty.
- **Data Input:** Policyholder-uploaded photos/video.
- **Output:** A structured damage summary per vehicle area with severity and confidence.

3. Cost Estimation

- **Objective:** Generate a preliminary repair cost estimate using both AI detection and historical/industry data.
- **How it works:**
 - Combine **damage summary** (types + severity) with:
 1. **Historical claim data:** Past claims for similar vehicles, damage types, and repair costs.
 2. **Industry-standard repair databases** (ex. Audatex): Provides standard labor, parts, and paint costs for each damage type.
 - a. integrating with Audatex at first, or another well known estimate database, can increase trust and credibility while we build our own estimate database.
 - AI calculates an **estimated cost range** by weighting historical averages, severity, and standard repair costs.
 - Dynamically updates when damage type and severity is edited
 - Confidence scores indicate reliability of the cost estimate.
- **Output:** Estimated total repair cost and an itemized breakdown by damage type, and ability to view what the system referenced.

4. RA (Repair Authorization) Generation

- **Objective:** Auto-generate a Repair Authorization once a claim is approved by a senior adjuster.
- **How it works:**
 - On sr. adjuster approval, the system generates an RA using the final damage summary, approved cost, claim details and pre-approved repair shops.
 - Uses a standardized template to ensure consistency and compliance.
- **Output:** RA is sent digitally to the policyholder and logged and download-able in the claim record.

5. Human <> AI Interaction

- **Prefilled Assessment:** The AI automatically generates the damage summary and preliminary cost estimate as soon as images are uploaded.
- **Editable Fields:** Claims agents can:
 - Adjust damage types, severity, or cost estimates
 - Add notes or context for edge cases
- **Dynamic Cost Update:** Once damage type and severity are updated, cost estimates are re-ran.
- **Transparency & Audit:**
 - Each AI action is logged in an **audit log**, including:
 - Images analyzed
 - Damage types and severity detected
 - Cost estimation methodology (e.g., Audatex + weighted historical claims)
 - Provides traceability and regulatory compliance.

7. Auditability

- Audit log tracks: when AI was used (on image upload/re-upload), structured JSON of what the AI was able to gather: an analysis summary, and which historical claim/db entry it referenced

Prios

Feature	Prio	Rationale
Claim Header	Must-have	necessary info to file a claim
AI Damage Estimation	Must-have	core functionality to automate a claim
AI Cost Estimation	Must-have	core functionality to automate a claim
Audit Log	Must-have	necessary for compliancy/trust
Historical Claim Reference	Must-have	necessary for compliancy/trust
Database Reference Integration	Must-have	necessary for compliancy/trust
Upload photo and re-run estimate	Should-have	if policyholder uploads photos, the chance the agent has additional photos is low
RA Generation	Should-have	quick win, but is secondary to our damage and cost automation goals
Analytics/Dashboards	Won't-have	out of scope for this project's goal

Success Metrics

Efficiency	Accuracy	Adoption
Efficiency <ul style="list-style-type: none"> Average time to generate an estimate Number of claims filed a day 	Accuracy <ul style="list-style-type: none"> Variance between AI-assisted estimates and final repair invoices Rate of reopened or adjusted claims 	Adoption <ul style="list-style-type: none"> % of claims using AI assessment Agent satisfaction score

Risk/Mitigation

Risk: Over-reliance on AI

Mitigation

- Mandatory human review
- Clear labeling of AI confidence

Risk: Model bias or misclassification

Mitigation

- Confidence thresholds
- HITL Escalation for low-confidence cases
- Continuous model evaluation

Risk: Regulatory concerns

Mitigation

- Full audit logs of AI outputs and human edits
- Explainable AI outputs where possible

Vnext

- Fraud detection flag of photos or video.
- Live chat between Policyholder and Claims Agent to speed up claims decisions if extra information is needed.
- Once trained, AI can act more autonomously, with less reliance on several round of review and external databases.