Team

01.

AI Technology in Insurance

How can AI automate insurance claims processing while protecting sensitive data and maintaining human oversight?

Insurance claims face a growing challenge: managing scattered communications and sensitive customer data while ensuring AI supports, not replaces, human decision-making.



P&C claims processing often depends on manual adjuster review, email-based communication, and repeated follow-ups when occurrence reports are incomplete. This slows claim handling, increases operational cost, and creates inconsistent severity triage. The project builds **Kairos AI**, a governed AI-based framework for automating key P&C claims workflows by combining deterministic controls with Qwen-based incident report analysis.

Methodology

Step 1: Studied the P&C claims workflow and identified key decision points in the occurrence-to-claim process.

Step 2: Built an AI-powered claims system using Python, Qwen, PostgreSQL, and email automation.

Step 3: Fine-tuned the AI to improve accuracy, oversight, and decision-making.

A collaborative project with:

UNIVERSITY OF TORONTO

CIBC

YORK UNIVERSITÉ UNIVERSITY

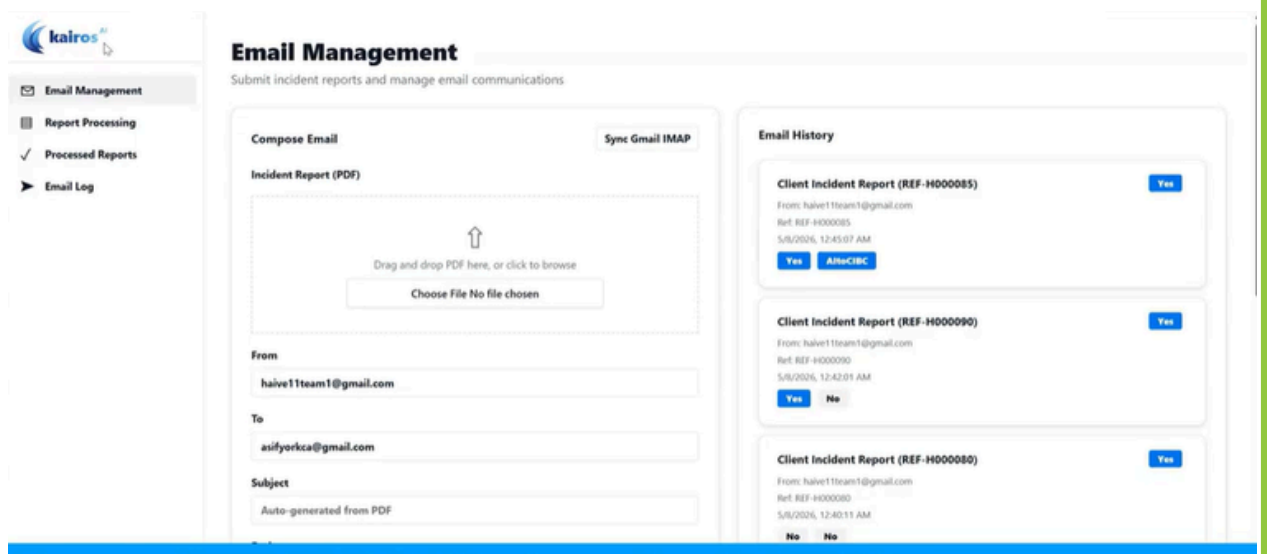
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The Framework

The team compared existing claims tools and developed **Kairos AI** to fill the gaps.

Its capabilities:

- **Understands structured reports**
- **Extracts key information**
- **Generates structured output**
- **Detects missing or incomplete details**
- **Classifies claim severity (Low/High)**



This is the demo of KAIROS AI website and on the Email Management page, user can upload the incident report as well as specify the sender & the recipient of the email.

Recommendation

- Kairos AI uses a rule-first, AI-assisted pipeline where **deterministic code handles operational actions**, while **Qwen supports limited-scope tasks** such as report summarization, severity classification, missing-information detection, and escalation reasoning.
- The approach reduces manual workload, improves consistency, and enhances privacy, auditability, and AI governance.

Next Steps?

The current workflow handles one main follow-up email effectively, but complex claims may require multi-turn communication. Future work should support longer email threads, escalation tracking, and human-supervised interactions.

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