Mail Intelligence Agency (MIA) with AI & n8n

of incoming emails using AI and n8n. The solution is particularly beneficial for banking and operations teams, allowing them to efficiently route, track, and process email requests with high accuracy. By leveraging AI for classification and integrating with Airtable for data storage, this workflow minimizes manual effort and enhances operational efficiency.

This document outlines a comprehensive workflow designed to automate the classification

to scale. This workflow uses AI + automation to:

Business Value

• Classify requests automatically based on strict, pre-approved request and sub-request

types. • Extract content from PDF/email attachments.

Manual classification of emails in banking operations can be error-prone, delayed, and hard

- JavaScript Code Nodes: Merge logic, Al prompt construction, and post-processing.
- **N8N-WorkFlow Created**

```
Pre-conditions & Setup
   • Gmail account connected via OAuth2 in n8n.
   • Airtable base with columns:
         • email_id
         • sender_email
         • email_subject
```

• status (new or duplicate)

• If False: Skip attachment parsing.

Extract from File

Passes both email_content and attachment_content. LLM returns only approved request_type and sub_request_type. • Handles an "Unclassified" fallback case.

Airtable Create

Adjustment

Principal)

IF Node

• Branches:

request_type

Constructs the prompt dynamically.

Function Node – Parse Al Output

• Closing Notice (Cashless Roll, Decrease, Increase) • Commitment Change • Fee Payment (Ongoing Fee, LOC Fee)

• Inserts the final JSON record into Airtable.

Supported Request Types

Currently, the AI model is limited to:

Principal+Interest+Fee)

• Unclassified (fallback category)

• Test Case 1: 1 Request Type – Email Content Only

Scenario: Closing Notice Request

Email Subject:

Services Team

Expected AI Output:

Attachment: X

Classification ∨

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Overview

Templates

X Variables

US ungalNaai sekar

Classification V Data Automations Interfaces Forms

Scenario: Fee Payment (Ongoing Fee)

TestEmail 2 arrived in configured Gmail account.

Q Search mail

□ - G

Primary

Mail Intelligence Agency (MIA)

Vigneshkumar ...

Vigneshkumar Ganesan

→ G 😘 mail.google.com/mail/u/0/#inbox

© localhost:56/8/workflow/yUcVRq6/JzZJ3dor

know if

Regards, Fund Admir

any further action is required.

Subject: Funding Instructions Enclosed

□ - C :

Vigneshkumar Ganesan

Vigneshkumar Ganesan

• Test Case 3: 1 New Request – Attachment Only

Scenario: Money Movement – Inbound (Foreign Currency)

195d296ea53f2290

Email Subject:

Email Body:

Compose

Snoozed

195d2a8ede13f96a

195d2ad0da774333

195d296ea53f2290

025 19... yes

025 18... no

Inbox

= M Gmail

Compose

■ Inbox

☆ Starred

Drafts

oo-{[©] n8n Dev

Overview

Templates

X Variables

? Help

✓ me ✓ A hasAttachment ✓ A attachment_key ✓ △ attachment_content ✓ A request_type.

AirTable screenshot clearly says that request from email properly classified.

• **Test Case 2**: 1 New Request + 1 Sub-Request – Email + Attachment

email_classification_table ~

□ 💆 195d296ea53f2290 025 18... no

? Help

Subject: Closing Notice Request for Account #8239 **Email Body:**

No attachment

← → ♂ % mail.google.com/mail/u/0/#inbox Q Search mail

□ - C :

← → C 2 airtable.com/appbpZYnaiApSJdwe/tblJvgVFlxor1yeSZ/viwiLravLqr4GYbUF

```
☐ Grid view ※ ✓ Williage fields 〒 Filter 回 Group It Sorted by 1 field ※ Color ■1 ☐ Share and sync
                   ≦ email_body
```

Mail Intelligence Agency (MIA)

```
Q Search
Email information clearly captured by N8N workflows and passed as input to AI model.
Response captured in AirTable.
    ⑤ OpenRouter API Key Fix X | ∞« ► Mail Intelligence Agency X ○ Classification: email_classifi X ► M Inbox (1) - iammaaisekar.19 X │ ※ Mail Intelligence Agency (1 X │ ≪ API Keys | OpenRouter
 ← → ♂ airtable.com/appbpZYnaiApSJdwe/tblJvgVFlxor1yeSZ/viwiLravLqr4GYbUF
  Classification V Data Automations
  email_classification_table \,\,\,\,\,\,\,\,\,\,\,\,\,
 ■ Views □ 日 Grid view ※ ∨ We Hide fields ■ Filter □ Group ↓↑ Sorted by 1 field ※ Color □ □ □ Share and sync
```

```
Email Subject:
  Subject: Fee Payment Advice for Q1 2025
Email Body:
  Dear Finance Team, Please find the attached fee payment summary for Q1 2025.
  Let us know if any further action is required. Regards,
Attachment Content (Text):
  Quarterly Fee Summary
  Client: ABC Fund
  Period: Jan-Mar 2025
  Fee Type: Ongoing Fee
  Amount: $20,000
Expected AI Output:
```

Promotions

Now n8n workflow picked up the alternate route with email attachment.

TestCase2.pdf

Brail Classification with n8 × → № Mail Intelligence Agency × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × 🦻 Mail Intelligence Agency (1) × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × № Mail Intelligence Agency (1) × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × № Mail Intelligence Agency (1) × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × № Mail Intelligence Agency (1) × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × Mail Intelligence Agency (2) × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × Mail Intelligence Agency (2) × Classification: email_classifi × Millipox (1) - iamnaaisekar.19 × Millipox (2) - iamnaaisekar.19 × Millipox (3) - iamnaaisekar.19 × Millipox (3) - iamnaaisekar.19 × Millipox (4) - iamnaaisekar.19 × Millip

荘

Fee Payment Advice for Q1 2025 - Dear Finance Team, Please find the attached fee payment summary for Q1 2025. Let us kno...

Closing Notice Request for Account #8239 - Dear Team, Please consider this as a formal request to close the investment accoun...

Updates

7:04 PM

+

Workflow executed successfully

1-20 of 20

7:08 PM

☆ № :

Social

Executions

Editor

```
Q Search
```

```
Attachment Content:
   Fund Transfer Instruction
   Amount: €1,000,000
   Currency: Euro
   Beneficiary: Global Equity Fund
   Purpose: Subscription funding
Expected AI Output:
      "request_type": "Money Movement-Outbound",
      "sub_request_type": "timebound"
Test case 3 email received in the configured node.
 Email Classification with n8 × | 🛶 Mail Intelligence Agency × | 🖸 Classification: email classifi × M Inbox (1) - iamnaaisekar. IS × 👂 Mail Intelligence Agency (1) × | < API Keys | OpenRouter
 Q Search mail
```

മൂ Social

Fund Transfer Instruction A... Money Movement-Outbou... Timebound

Closing Notice

Fee Payment Advice for Q1 2025 - Dear Finance Team, Please find the attached fee payment summary for Q1 2025. Let us know ..

Updates

A sub_request_type

Ongoing Fee

A request_status

☐ Grid view 🕸 🗸 🚳 Hide fields 😇 Filter 🖽 Group 🛂 Sorted by 1 field 💍 Color 🖃 📑 📑 Share and sync A attachment_key Quarterly Fee Summary Cli... Fee Payment attachment_0

- **Additional Handled Features** Email with no content but attachment: Handled. • Attachment-only classification: Supported. Duplicate detection based on sender + request type: Implemented. • Classification fallback: Unclassified assigned when match not found.

- Track each request with a structured JSON format. Automatically mark duplicate vs. new requests. • Store all classified records in a central Airtable database for tracking, audit, or reporting. **Technology Stack** • n8n: Low-code workflow automation engine. • OpenRouter (Mistral-7B): Al model for classification. • **Gmail**: Email trigger and attachment source. • Airtable: Central storage for classified requests. • PDF Parser Node: Extract content from email attachments.
- email_body attachment_content • request_type • sub_request_type
- OpenRouter AI key and endpoint. • n8n self-hosted or Desktop version installed. • Triggers on every new incoming email (polls every minute).
- Node-by-Node Breakdown **Gmail Trigger** Can filter has:attachment or apply label-based filtering.

- Retrieves full content of the email and binary attachments. • Edit Fields: Extracts key fields: email_body, email_subject, sender_email, email_id, etc.
- **Gmail Get Message Function Node – Detect Attachments** • Checks for attachments in binary input. • Flags hasAttachment = true and identifies the binary key.
- Extracts text content from attachments. Function Node – Merge Email + Attachment Combines email_body and attachment_content into one Al-ready field finalParsedEmailContent. HTTP Request – OpenRouter Al

• If True: Parse attachment using "Extract from Attachments".

- Extracts structured classification into: sub_request_type Airtable Search Checks if an existing record from the same sender_email with same request_type already exists. • Sets status = Duplicate or status = New.
- These can be expanded by updating the Airtable reference table and passing it into the AI prompt dynamically. **Test Cases**

• AU Transfer (with sub-types: Reallocation Fees, Amendment Fees, Reallocation

• Money Movement – Inbound (Principal, Interest, Principal+Interest,

Money Movement – Outbound (Timebound, Foreign Currency)

"request_type": "Closing Notice", "sub_request_type": ""

Email received in the configured email inbox and state of AirTable target is flushed out.

Dear Team, Please consider this as a formal request to close the investment

account #8239. Let me know if any documentation is required. Thanks,

Workflow triggered automatically if active option enabled. for demo purpose executed manually and captured the output of flow. C localhost:5678/workflow/yUcVRq67JzZJ3dor

☆ 🕹 🚺 🗄

Trial: 14 days left

 ✓
 A email_subject
 ✓
 A sender_email
 ✓
 A email_received_time
 ✓
 A hasAttachment
 ✓
 A attachment_key
 Please consider this as a formal request to close the investment 2.7 Subject: Closing Notice Rc... From: Vigneshkumar Ganes... Date: Wed, 26 Mar 2025 18... no 2* 195d296ea53f2290 Thanks. Client Services Team ⑤ OpenRouter ΛΡΙ Κεγ Fix × | ∞ς ► Mail Intelligence Λgency (↑ × | ≪ ΛΡΙ Κεγs | OpenRouter × | + ☆ 10 :

A sub_request_type
A request_status

```
Now lets see the AirTable content. it clearly captured both request_type and
sub_request_type.
  💌 🔞 Email Classification with n8 🔞 | 🐗 Mail Intelligence Agency (N 🗴 | 📽 PMail Intelligence Agency (N 🗴 | 📽 API Kcys | OpenRouter
  ← → C airtable.com/appbpZYnai/\pSJdwe/tblJvgVFlxor1yeSZ/viwiLravLqr4GYbUF
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                                                                                                                                                   Trial: 14 days left
   email_classification_table
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         A email_id
                                                                            025 19... yes
         195d2a8ede13t96a
                                                                               Quarterly Fee Summary Cli... Fee Payment
                                                                                                                                                "New"
         195d296ea53f2290
                             025 18... no
     © Email Classification with n8 x | ∞ ← Mail Intelligence Agency x | ○ Classification: email classif | x | Minbox (1) - iamnaaisekar. IS x | ≫ Mail Intelligence Agency (1 x | < API Keys | OpenRouter</p>
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   Classification 
                                                                                                                                    Melp Trial: 14 days left
   email_classification_table
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                                            \triangle email_id
                                                                                                   A sender_email
                              Please find the attached fee payment summary for O1 2025. Let us
        195d2a8ede13f96a
                                                                                 Subject: Fee Payment Advic... From: Vigneshkumar Ganes... Date: Wed, 26 Mar 2025 19...
```

Subject: Closing Notice Re... | From: Vigneshkumar Ganes... | Date: Wed, 26 Mar 2025 18... | no

Drafts Vigneshkumar Ganesan Closing Notice Request for Account #8239 - Dear Team, Please consider this as a formal request to close the investment accoun... 3rd scenario also properly captured in AirTable. © Email Classification with n8 X | **≪ ▶ Mail Intelligence Agency X | □ Classification: email classifi X | Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | Classification: email classifi X | + √ Mail Intelligence Agency (↑ X | + √ Mail Intelli $\leftarrow \quad \Rightarrow \quad \textbf{C} \qquad \text{2- airtable.com/appbpZYnaiApSJdwe/tblJvgVFlxor1yeSZ/viwiLravLqr4GYbUF}$ Classification 🗸 Data Automations Interfaces

Funding Instructions Enclosed

TestCase3.pdf

- Airtable updates: Final JSON inserted with all fields + status. Conclusion
- This solution brings banking email processing to autopilot, using low-code power from n8n and LLM flexibility from Mistral. It transforms unstructured inbox chaos into structured, actionable data stored in Airtable. Whether it's AU Transfers, Adjustments, or Fee Payments, this pipeline ensures nothing slips through the cracks. And with duplicate detection, your operations team stays informed without repetition. You can extend it further with Slack alerts, ticketing, or approval workflows. 💪