How an International Transportation Company Optimized High Volume Email Processing in Customer Centers

SemanticPro Classify & Automate Case Study

The Challenge

The company was receiving between 100,000 and 250,000 customer emails per day in 35 countries. A major challenge with such a high volume of incoming emails was to identify the emails that actually required a response (only 50%). So far, the customer centers spent a significant amount of time sorting out emails that do not need to be processed (e.g. out of office messages, FYI mails, etc.), a task that unnecessarily burdened the teams and increased the costs in the customer centers. The task was further complicated through the use of multiple languages in the emails.

The Cortical.io Solution

Cortical.io, together with its partner PwC Germany, developed a Web service to detect emails that are not business case relevant. The solution flags those emails as "no case", and in addition categorizes the email topic (e.g. "invoice") for proper routing. The solution was trained with a small amount of annotated emails and reference material related to the logistics domain (books, pdfs, websites, emails). In addition to classification, the solution uses language detection algorithms to route mixed language emails to the appropriate native language speaker. The solution can easily be adapted to new situations at short notice and has minimal hardware requirements.

Company Profile
International Transportation Company

The Goal
Optimize email processing in customer centers by flagging irrelevant emails and automatically routing business-relevant emails

The Solution
SemanticPro Classify & Automate

The Cortical.io Impact

The SemanticPro Classify & Automate solution combines human-level accuracy with fast processing (less than one second average response time) and high scalability. The system is so precise that it detected errors produced by human annotators in the training set. In addition, the solution allows an "audit-track"—every single decision of the system can be clearly traced and each semantic processing step can be inspected, allowing the company to understand why each email has been classified as "case" or "no case"—an important aspect with respect to international rules like GDPR, which oblige companies to be able to justify any decision based on the use of an automated system.

Unlocking value by understanding natural language

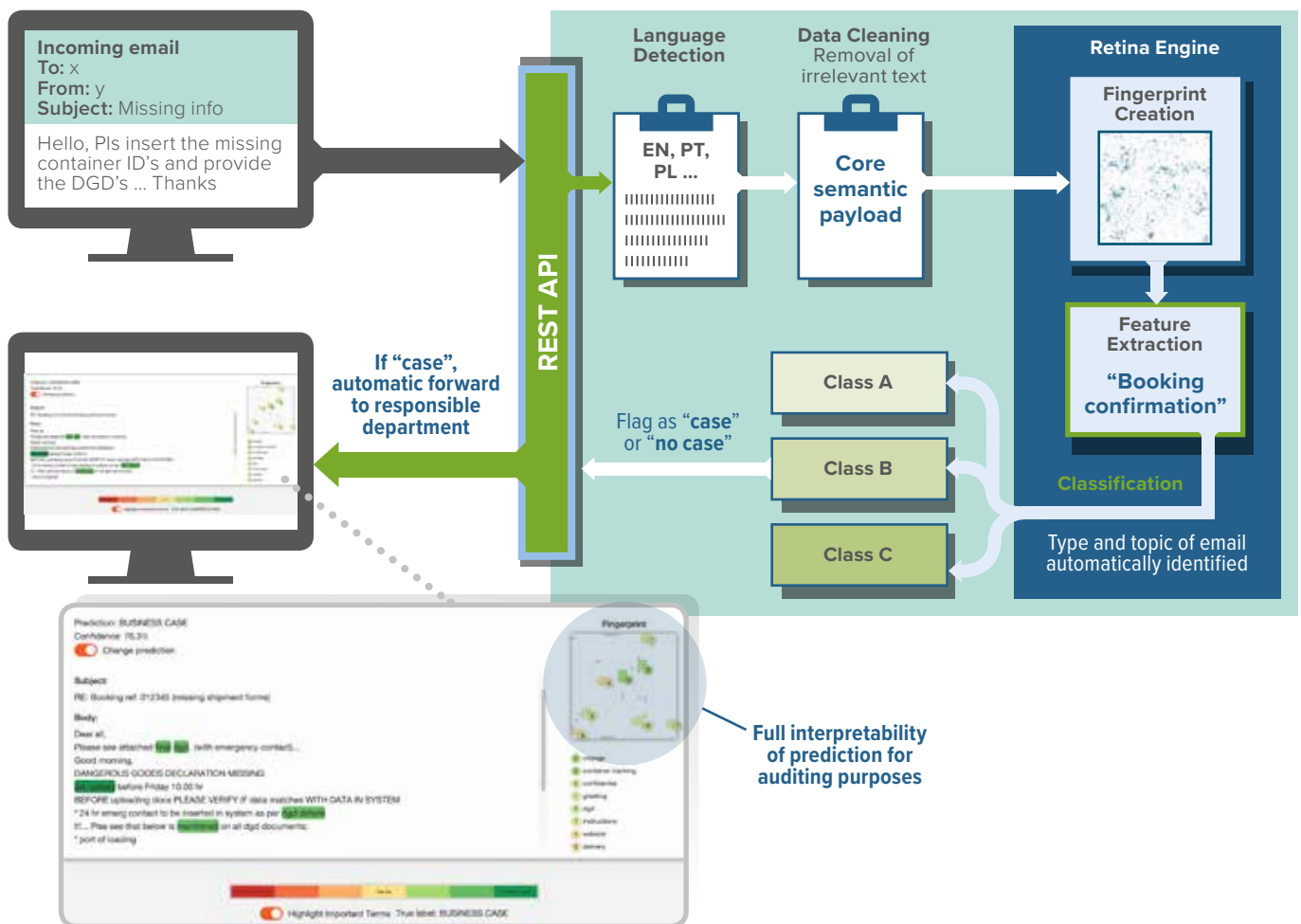cortical.io

SemanticPro Classify & Automate Case Study

By using SemanticPro Classify & Automate, the company was able to automatically:

- Extract relevant terms from hundreds of thousands of emails daily
- Label each new incoming email as "case" or "no case", with indication of the level of prediction confidence
- Classify each business-relevant email into categories like invoice, complaint, order, etc.
- Review relevant terms and interpret the model through an intuitive color coding
- Visualize the email topics by clusters and trace them back to the corresponding documents used for the training
- Route the incoming, business-relevant emails to the appropriate teams depending on the language used in the email

How does it work?

Incoming email
To: x
From: y
Subject: Missing info

Hello, Pls insert the missing container ID's and provide the DGD's ... Thanks

REST API

Language Detection
EN, PT, PL ...

Data Cleaning
Removal of irrelevant text
Core semantic payload

Retina Engine
Fingerprint Creation

Feature Extraction
"Booking confirmation"

Classification

Type and topic of email automatically identified

Class A
Class B
Class C

Flag as "**case**" or "**no case**"

If "case", automatic forward to responsible department

Full interpretability of prediction for auditing purposes

For more information about this case study and Cortical.io solutions, visit
www.cortical.io or email **info@cortical.io**

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