

CLAIMS

We claim:

1. A method for efficiently generating a plurality of personalised email strategies and a corresponding personalised email, for each recipient of a campaign, the method being executed by a processor:

receiving multi-dimensional data comprising account data, recipient data, and seller data from one or more data sources;

processing the received multi-dimensional data via a processing module executed by the processor to extract one or more features;

generating a dynamic feature hierarchy based on the one or more extracted features by executing a feature ranking module, wherein generating the dynamic feature hierarchy comprises:

executing the feature ranking module to automatically evaluate and rank the one or more features, wherein the processor computes correlation coefficients using a correlation analysis algorithm calculating relationships between the one or more features and a desired outcome, and storing correlation values in a system memory;

assigning feature importance scores by executing a machine learning model on the processor; and

updating the dynamic feature hierarchy in real-time based on interaction data collected from previously transmitted emails and received recipient responses, the updates being executed automatically by the processor via a feedback loop module;

fine-tuning a pre-trained machine learning model using the dynamic feature hierarchy, wherein one or more model parameters are adjusted by executing a model tuning module, the fine-tuning being performed based on an importance of the one or more features in the dynamic feature hierarchy;

generating the plurality of email strategies for each of the recipient of the campaign by using the fine-tuned machine learning model, wherein the fine-tuned machine learning model is applied to generate one or more of personalized content, timing, and format recommendations the plurality of personalised email strategies based on the extracted features and the assigned feature importance scores;

selecting an email strategy from the plurality of personalised email strategies based on one or more factors, wherein the processor executes a strategy selection algorithm that scores and ranks the plurality of personalised email strategies based on the one or more factors including engagement potential, relevance, outreach appropriateness, and saliency, and automatically selects the highest-ranked strategy;

generating a personalised email corresponding to the selected email strategy; and

sending the personalized email to each recipient of the campaign, and monitoring recipient interactions with the personalized email in real-time, wherein interaction data from the monitoring is used to further refine the dynamic feature hierarchy and fine-tune the pre-trained machine learning model for subsequent email strategies.

2. The method of claim 1, further comprising:

receiving a reply to the sent personalized email;

analysing content of the received reply using natural language processing techniques to determine if the received reply comprises a complex query; and

in response to determining that the received reply comprises the complex query, automatically routing the complex query to a designated human representative.

3. The method of claim 2 further comprising:

updating the dynamic feature hierarchy based on a response to the complex query by the designated human representative's; and

adjusting the fine-tuned pre-trained machine learning model based on the updated dynamic feature hierarchy to improve future email strategy generation.

4. The method of claim 1 wherein extracting the one or more features from the multi-dimensional data further comprises:

identifying engagement metrics, including email open rates, click-through rates, and purchase behaviour;

analysing temporal data to determine recipient activity patterns, including time of day and frequency of interactions; and

performing natural language processing (NLP) on textual data, including feedback and user-generated content, to derive sentiment scores;

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5. The method of claim 1, further comprising: evaluating the generated plurality of email strategies to determine if offensive content is present.

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6. The method of claim 1, wherein generating the dynamic feature hierarchy comprises creating a hierarchy of features based on the received multi-dimensional data, with a set of features positioned at a highest level.

7. The method of claim 1, further comprising displaying on a graphical user interface, the generated personalized email and the selected email strategy.

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8. The method of claim 7, wherein the graphical user interface highlights one or more citations in the displayed personalized email and displays the selected email strategy when a user hovers a cursor over a highlighted citation.

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9. A system for efficiently generating a plurality of personalised email strategies and a corresponding personalised email, for each recipient of a campaign, the system comprising:

a memory storing one or more instructions;

a processor communicatively coupled with the memory, wherein upon execution of the stored instructions in the memory, the processor is configured to:

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receive multi-dimensional data comprising account data, recipient data, and seller data from one or more data sources;

process the received multi-dimensional data via a processing module executed by the processor to extract one or more features;

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generate a dynamic feature hierarchy based on the one or more extracted features by executing a feature ranking module, wherein generating the dynamic feature hierarchy comprises:

execute the feature ranking module to automatically evaluate and rank the one or more features, wherein the processor computes correlation coefficients using a correlation analysis algorithm calculating relationships between the one or more features and a desired outcome, and storing correlation values in a system memory;

assign feature importance scores by executing a machine learning model on the processor; and

update the dynamic feature hierarchy in real-time based on interaction data collected from previously transmitted emails and received recipient responses, the updates being executed automatically by the processor via a feedback loop module;

fine-tune a pre-trained machine learning model using the dynamic feature hierarchy, wherein one or more model parameters are adjusted by executing a model tuning module, the fine-tuning being performed based on an importance of the one or more features in the dynamic feature hierarchy;

generate the plurality of email strategies for each of the recipient of the campaign by using the fine-tuned machine learning model, wherein the fine-tuned machine learning model is applied to generate one or more of personalized content, timing, and format recommendations for the email strategy based on the extracted features and ranked importance;

select an email strategy from the plurality of personalized email strategies based on one or more factors, wherein the processor executes a strategy selection algorithm that scores and ranks the plurality of personalized email strategies based on the one or more factors including engagement potential, relevance, outreach appropriateness, and saliency, and automatically selects a highest-ranked strategy;

generate a personalised email corresponding to the selected email strategy; and

send the personalized email to each recipient of the campaign, and monitor recipient interactions with the personalized email in real-time, wherein interaction data from the monitoring is used to further refine the dynamic feature hierarchy and fine-tune the pre-trained machine learning model for subsequent email strategies.

10. The system of claim 9, where in the processor is further configured to:

receive a reply to the sent personalized email;

analyse content of the received reply using natural language processing techniques to determine if the received reply comprises a complex query; and

5 in response to determine that the received reply comprises the complex query, automatically routing the complex query to a designated human representative.

11. The system of claim 10, wherein the processor is further configured to:

10 update the dynamic feature hierarchy based on a response to the complex query by the designated human representative; and

adjust the fine-tuned pre-trained machine learning model based on the updated dynamic feature hierarchy to improve future email strategy generation.

12. The system of claim 9 wherein extracting the one or more features from the multi-dimensional data further comprises:

identify engagement metrics, including email open rates, click-through rates, and purchase behaviour;

15 analyse temporal data to determine recipient activity patterns, including time of day and frequency of interactions; and

20 perform natural language processing (NLP) on textual data, including feedback and user-generated content, to derive sentiment scores;

13. The system of claim 9, wherein the processor is further configured to:

25 evaluate the generated plurality of email strategies to determine if offensive content is present.

14. The system of claim 9, wherein to generate the dynamic feature hierarchy comprises:

30 creating the hierarchy of features based on the received multidimensional data, with a set of features positioned at the highest level.

15. The system of claim 9, wherein the processor is further configured to display on a graphical user interface, the generated personalized email and the selected email strategy.

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16. The system of claim 15, wherein the graphical user interface highlights one or more citations in the displayed personalized email and displays the selected email strategy when a user hovers a cursor over a highlighted citation.