CLAIMS:

1. A method comprising:

determining a candidate document comprising image data and character data;

extracting the image data and the character data from the candidate document;

providing, to an image-based numerical representation generation model, the image data;

generating, by the image-based numerical representation generation model, an image-based numerical representation of the image data;

providing, to a character-based numerical representation generation model, the character data;

generating, by the character-based numerical representation generation model, a character-based numerical representation of the character data;

providing, to a consolidated image-character based numerical representation generation model, the image-based numerical representation and the character-based numerical representation;

generating, by the consolidated image-character based numerical representation generation model, a combined image-character based numerical representation of the candidate document; .

~~2. The method of claim 1 further comprising:~~

comparing the combined image-character based numerical representation of the candidate document with an index of combined image-character based numerical representations, each combined image-character based numerical representations of the index being indicative of a respective document having a first attribute value;

determining a combined image-character based numerical representation of the index that substantially corresponds with the combined image-character based numerical representation of the candidate document; and

associating the candidate document with the first attribute value of the determined combined image-character based numerical representation of the index.

~~3~~2. The method of claim ~~2~~1, wherein the first attribute value is an entity identifier.

~~4~~3. The method of claim ~~2~~ 1 or ~~3~~2, wherein the respective document of each combined image-character based numerical representation of the index has a second attribute value, and wherein associating the candidate document with the first attribute value of the determined combined image-character based numerical representation of the index further comprises associating the candidate document with the second attribute value of the determined combined image-character based numerical representation of the index.

~~5~~4. The method of claim 43, wherein the second attribute value is a document type indicator.

~~6~~5. The method of any one of the preceding claims ~~2~~, wherein comparing the combined image-character based numerical representation of the candidate document with an index of combined image-character based numerical representations comprises determining a similarity metric indicating substantial correspondence between the numerical representation of the candidate document with each record of the index of combined image-character based numerical representations.

~~7~~6. The method of claim 5~~6~~, wherein the similarity metric is determined based on euclidean distance metric or cosine similarity metric.

~~8~~7. The method of any one of the preceding claims, wherein the image-based numerical representation generation model, character-based numerical representation generation model and consolidated image-character based numerical representation

generation model each comprise a neural network trained to generate the respective numerical representations.

~~9~~8. The method of any one of the preceding claims, wherein the image-based numerical representation generation model comprises a depthwise convolutional neural network to generate the image-based numerical representation of the image data.

~~10~~9. The method any one of the preceding claims, wherein the character-based numerical representation generation model comprises a transformer based neural network to generate the character-based numerical representation of the image data.

~~11~~10. The method of any one of the preceding claims, wherein the image-based numerical representation generation model, the character-based numerical representation generation model and the consolidated image-character based numerical representation generation model are trained using end-to-end learning.

~~12~~11. The method of any one of the preceding claims, wherein the image data comprises pixel data extracted from an image of the candidate document.

~~13~~12. The method of any one of the preceding claims, wherein the character data comprises character data extracted by performing optical character recognition on the image of the candidate document.

~~14~~13. The method of any one of the preceding claims, wherein the candidate document is an accounting document and the first attribute value is indicative of an originator of the accounting document.

~~15~~14. The method of any one of the preceding claims, wherein the image-based numerical representation generation model, character-based numerical representation generation model and consolidated image-character based numerical representation

generation model are trained using an objective function configured to maximise a similarity metric between numerical representations of training documents with identifier common set of attributes.

~~16~~15. The method of claim ~~15~~14, wherein the objective function is further configured to minimise the similarity metric between numerical representations of training documents with different class identifiers.

~~17~~16. The method of claim ~~15~~ 14 or claim ~~16~~15, wherein the objective function comprises a multi-class N-tuple loss function.

~~18~~17. A method comprising:

determining a plurality of example documents, each example document being a unique example document associated with a set of attributes;

for each of the example documents:

extracting the image data and the character data from the document;

providing, to an image-based numerical representation generation model, the image data;

generating, by the image-based numerical representation generation model, an image-based numerical representation of the image data;

providing, to a character-based numerical representation generation model, the character data;

generating, by the character-based numerical representation generation model, a character-based numerical representation of the character data;

providing, to a consolidated image-character based numerical representation generation model, the image-based numerical representation and the character-based numerical representation;

generating, by the consolidated image-character based numerical representation generation model, a combined image-character based numerical representation of the document; and

labelling the combined image-character based numerical representation of the document with the at least first attribute; and

collating the combined image-character based numerical representations for the plurality of example documents into an index of numerical representations.

~~19~~18. A system comprising:

one or more processors; and

memory comprising computer executable instructions, which when executed by the one or more processors, cause the system to perform the method of any one of claims 1 to ~~18~~17.

~~20~~19. A computer-readable storage medium storing instructions that, when executed by a computer, cause the computer to perform the method of any one of claims 1 to ~~18~~17.