CLAIMS

1. A system for non-destructive taste profiling of a sample of a food, the system comprising:

a receptacle configured to move the sample in a path so as to intersect a volumetric sampling space, the sample being in a non-homogenized form;

a sensor configured to sense reflectance from at least a part of the sample in the volumetric sampling space, the sensor being configured to output a component of the reflectance as captured data, the captured data being characterised by an overtone spectrum over a range of wavelengths; and

a computing device configured to apply at least one first machine learning model to the captured data to:

predictively determine selected wavelengths from the range of wavelengths;

predict at least one facet corresponding to the selected wavelengths; and

provide a signature data using the at least one facet, wherein the signature data is characteristic of a taste of the food.

2. The system of claim 1, wherein the receptable is configured to move relative to the source and/or the optical device to define the volumetric sampling space.

3. The system of claim 2, wherein the sensor is configured to remove spatial information from the reflectance.

4. The system of claim 2, further configured to apply at least one second machine learning model to the signature data to:

predict at least one descriptor; and

provide the signature of the sample using the at least one descriptor.

5. The system of claim 4, wherein the computing device is further configured to apply the at least one second machine learning model to the signature data to predict a blend

intended to have a taste associated with the sample, wherein the blend has a composition of ingredients different from a composition of the sample.

6. The system of claim 4, wherein the computing device is configured to apply the at least one second machine learning model to the signature data to predict a variant and/or a category of the sample.

7. The system of claim 4, wherein the computing device is configured to apply the at least one second machine learning model to the signature data to predict a degree of purity of the sample.

8. A method of non-destructive taste profiling of a sample of a food, the method comprising:

providing captured data to a computing device, the captured data being characterised by an overtone spectrum of a measure of a reflectance over a range of wavelengths, wherein the reflectance is sensed from at least a part of the sample in a volumetric sampling space, the sample including non-homogenised food;

predicting at least one facet by applying at least one first machine learning model to the captured data, wherein the at least one facet corresponds to at least one selected wavelength predictively determined from the range of wavelengths; and

using the at least one facet to provide a signature data characteristic of the sample, wherein the signature data is characteristic of a taste of the food.

9. The method of claim 8, further comprising: applying at least one second machine learning model to the signature data, wherein the at least one second machine learning model is configured to:

predict at least one descriptor; and

provide the signature of the food using the at least one descriptor.

10. The method of claim 9, further comprising: predicting a blend intended to have a taste associated with the food, wherein the blend has a composition of ingredients different from a composition of the food.

11. The method of claim 9, wherein the second machine learning model is at least one selected from a group consisting of: a taste profile prediction module, a variety prediction module, a blend configuration module, an adulteration detection module, and a food grade/quality control module, and a nutritional analysis module.