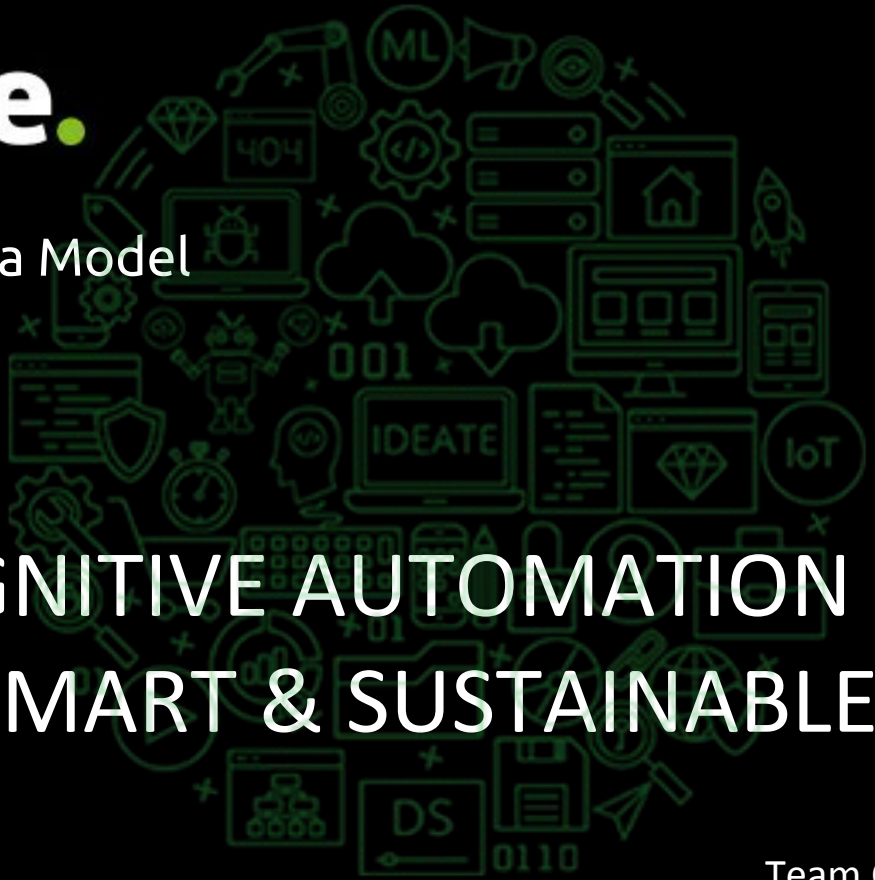
Deloitte.

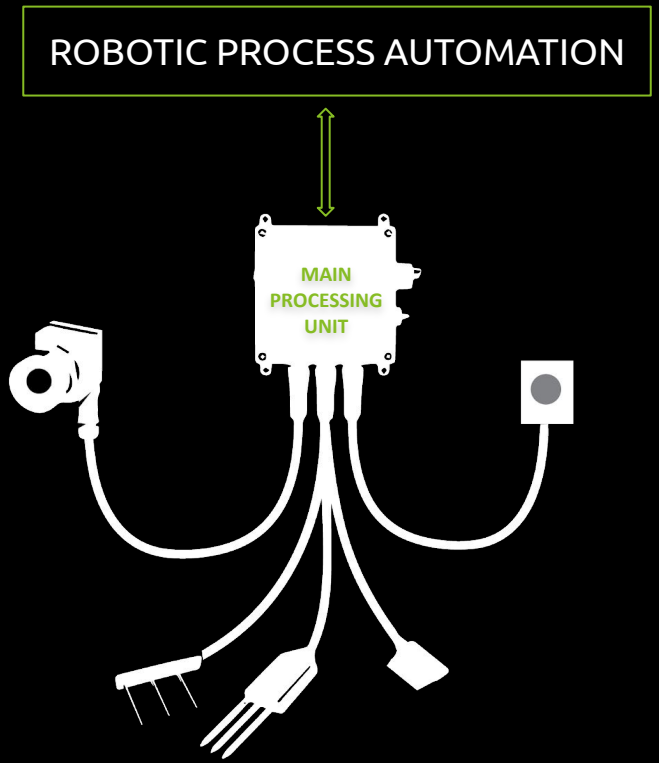
Solution Design,
Architecture & Data Model



COGNITIVE AUTOMATION FOR CLIMATE SMART & SUSTAINABLE FARMING

Team Captain: Shivam Gohri
Team: UIET Chandihgarh_intelliJ

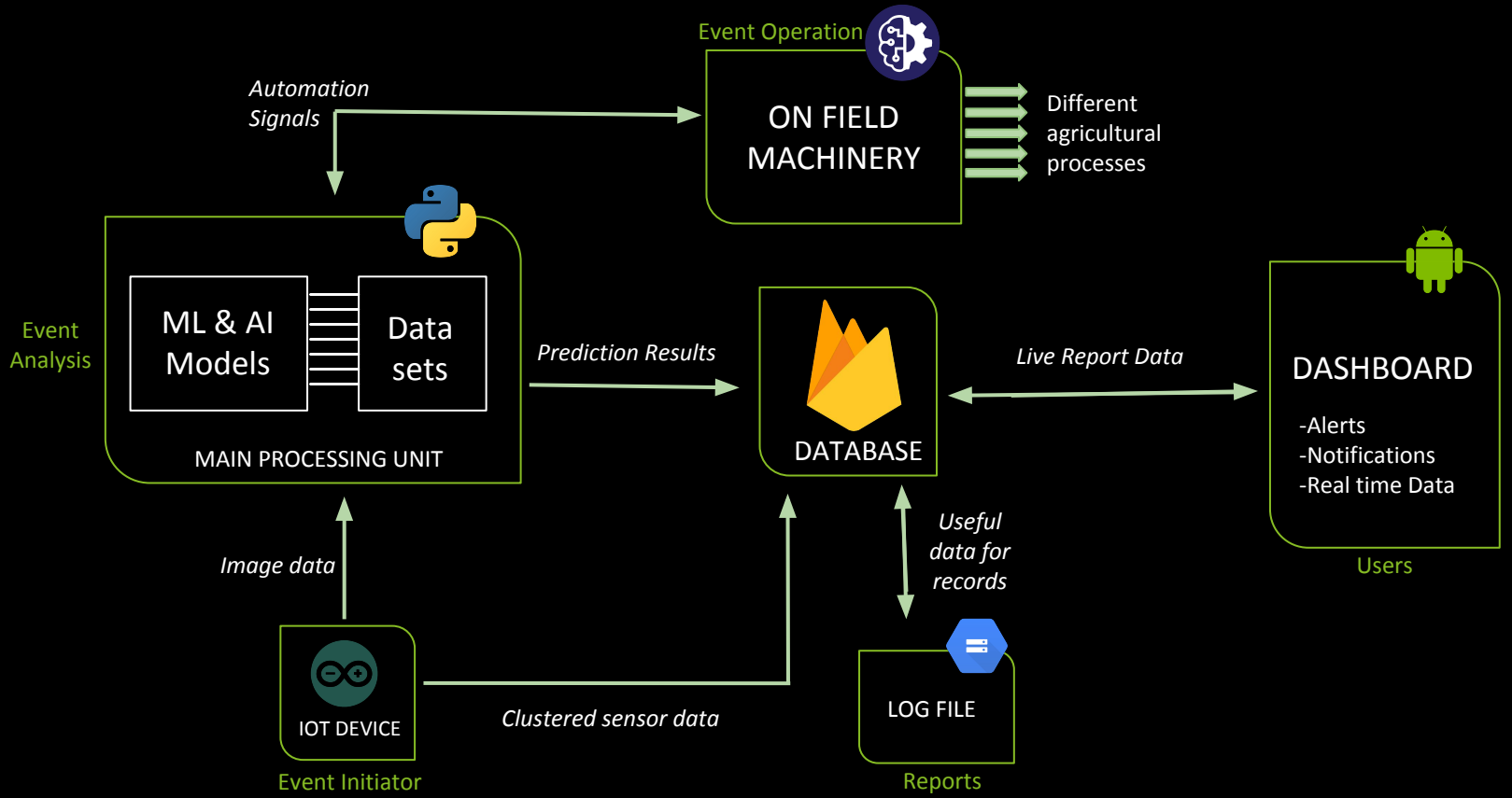
DESIGN



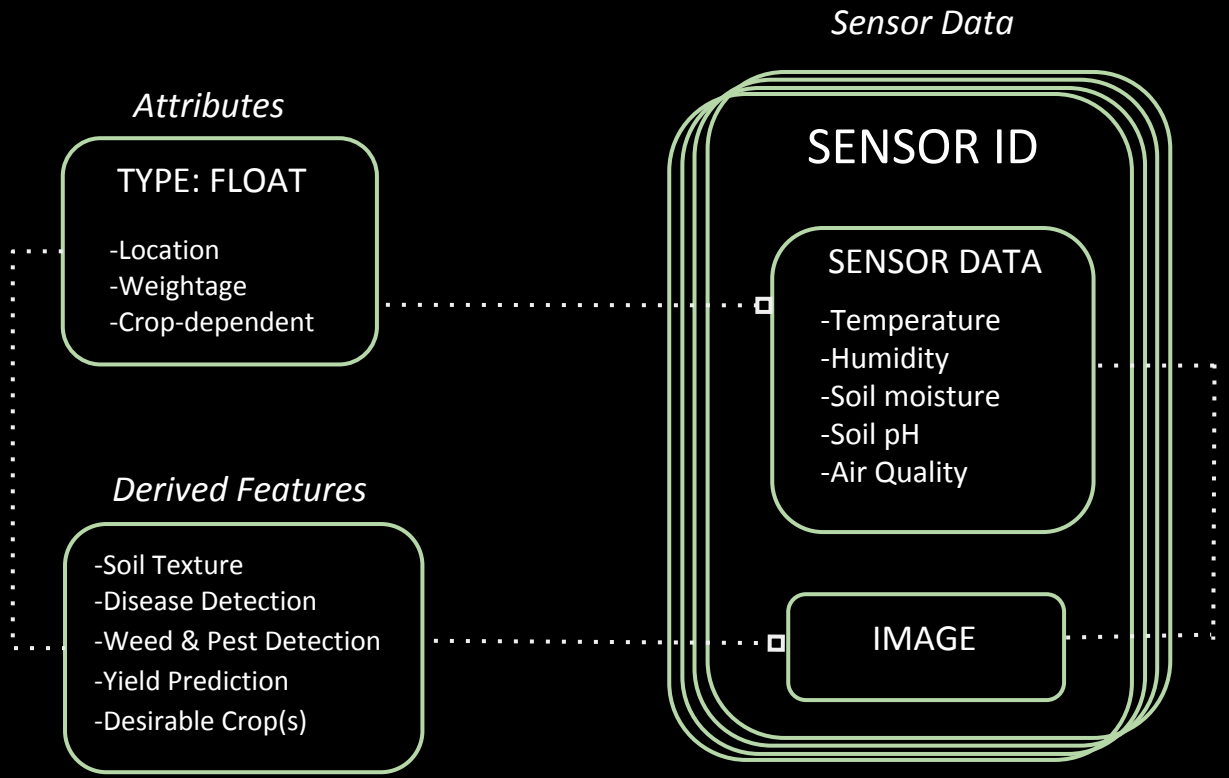
- 3D printed models for the IoT device containing all the sensors will be implemented on the field forming a mesh network. 3D printed models will be cost-effective and would be very reliable.

- IoT device will communicate with the Main Processing Unit and it will further communicate with the agricultural robotic processes leading to the automation in the whole system which will be efficient.

ARCHITECTURE



DATA MODEL


Sensor Data
Attributes
TYPE: FLOAT
-Location
-Weightage
-Crop-dependent
SENSOR ID
SENSOR DATA
-Temperature
-Humidity
-Soil moisture
-Soil pH
-Air Quality
Derived Features
-Soil Texture
-Disease Detection
-Weed & Pest Detection
-Yield Prediction
-Desirable Crop(s)
IMAGE

DATA MODEL

The data chain consists necessarily of a technical layer that captures raw data and converts it into information and a business layer that makes decisions and derives value from provided data services and business intelligence.

We convert the IoTs information to *float* data type and the analysis on this information data depends on the following attributes:
-Location
-Weightage
-Crop-dependent

The derived features from image dataset are Soil Texture, Disease Detection, Weed & Pest Detection, Yield Prediction, Desirable Crop(s)

Analysis is done on this prepared data. Mostly, data modeling/discovery applies intelligent methods to identify patterns in the data. The analysis tools include classification, clustering, association, and so on.