

Image Recognition in Swachh Bharat Urban Mission – Mobile Photo Uploads by Citizens - Metadata Repository

Content Independent Cataloging

```
/****** Database
*****/
USE [IHHL_SBM]
GO
```

Source -

- Original Owners -
Ministry of Housing & Urban Affairs – Swachh Bharat Urban Mission
- Date Received -
August 2018
- Portion of Dataset Received -
Jan to June 2018 (5 Lac Records)
- Portion of Dataset Used for Machine Learning-
April 2018 (65000 Records)
- Portion of Dataset Being Used for Deep Learning-
Jan to June 2018 (5 Lac Records)

Content Dependant Metadata

```
/****** Input Files
*****/
```

```
CREATE TABLE [dbo].[IHHL_Detail_ph_ii](
    [APPLICATION_ID] [varchar](12) NOT NULL,
    [STATE_CODE] [smallint] NOT NULL,
    [DISTRICT_CODE] [smallint] NULL,
    [ULB_CODE] [int] NULL,
    [WARD_NO] [int] NULL,
```

```

[APPLICANT_NAME] [varchar](150) NULL,
[FATHER_HUSBAND_NAME] [varchar](150) NULL,
[CONTACT_MOBILE] [varchar](10) NULL,
[TOILET_PHOTO_IMG] [image] NULL,
[TOILET_PHOTO_IMG_CType] [varchar](50) NULL,
[TOILET_PHOTO_LAT] [float] NULL,
[TOILET_PHOTO_LNG] [float] NULL,
[EDT_BY] [int] NULL,
[EDT] [datetime2](3) NULL, /**** photo Entry date ****/
[UDT_BY] [int] NULL,
[UDT] [datetime2](3) NULL, /**** Updation date ****/
[TOILET_PHOTO_FORMAT] [int] NULL,
[CURRENT_STATUS] [int] NULL,
[CURRENT_STATUS_DATE] [datetime2](3) NULL,
[Is_Img_URL_Updated] [bit] NULL,
[TOILET_PHOTO_PATH] [varchar](150) NULL,
CONSTRAINT [PK_IHHL_Detail_ph_ii] PRIMARY KEY CLUSTERED
(
    [APPLICATION_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY =
OFF, ALLOW_ROW_LOCKS = ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

```

```

CREATE TABLE [dbo].[IHHL_Detail_img](
    [state_code] [smallint] NOT NULL,
    [application_id] [varchar](12) NOT NULL,
    [photograph_img] [image] NULL,
    [photograph_img_Ctype] [varchar](50) NULL,
    [bank_passbook_img] [image] NULL,
    [bank_passbook_img_ctype] [varchar](50) NULL,
    [edt] [datetime2](3) NOT NULL,
    [edt_by] [int] NOT NULL,
    [udt] [datetime2](3) NULL,
    [udt_by] [int] NULL,
    [district_code] [smallint] NOT NULL,
    [ulb_code] [int] NOT NULL,
    [photograph_img_path] [varchar](150) NULL,
    [bank_passbook_img_path] [varchar](150) NULL
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
GO

```

```

/***** Output Files
*****/

```

```

CREATE TABLE [dbo].[ToiletFaceHisto](
    [APPLICATION_ID] [varchar](12) NOT NULL,
    [ToiletFound_Status] [char](1) NULL,
    [BeneficiaryFound_Status] [char](1) NULL,
    [ApplicantMatch_Status] [char](1) NULL
) ON [PRIMARY]
GO

```

```

CREATE TABLE [dbo].[ToiletFaceStatus](
    [APPLICATION_ID] [varchar](12) NOT NULL,
    [ToiletFound_Status] [char](1) NULL, /***** With Parameter
Threshold 30 *****/
    [ToiletFound_Status2] [char](1) NULL, /***** With Parameter
Threshold 20 *****/
    [ToiletFound_Status3] [char](1) NULL, /***** With Parameter
Threshold 30 and with negative examples fed back to the model*****/
    [BeneficiaryFound_Status] [char](1) NULL, /**** With Parameter
Threshold 30 *****/
    [BeneficiaryFound_Status2] [char](1) NULL, /**** With Parameter
Threshold 20 *****/
    [ApplicantMatch_Status] [char](1) NULL
) ON [PRIMARY]
GO

```

Content Descriptive Metadata

For Object Detection using Machine Learning

- Used KNN & SIFT Algorithm was used for Toilet Seat Detection
- Used HAAR Cascade Frontal Face Default classifier used for Human Face Detection
- Used OPENCV Computer Vision Library which is a free open source software for Object Detection from the URL <https://opencv.org/>
