

(54) Title of the invention : SMART DRAINAGE MONITORING SYSTEM USING MACHINE LEARNING AND DEEP LEARNING

<p>(51) International classification :H04L0029080000, E02B0011000000, G01B0017000000, E21F0016020000, B25J0019020000</p> <p>(86) International Application No Filing Date :PCT// :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number Filing Date :NA :NA</p> <p>(62) Divisional to Application Number Filing Date :NA :NA</p>	<p>(71)Name of Applicant :</p> <p><b>1)NARAYANANAN MADESHAN</b> Address of Applicant :Dr.M.Narayanan Plot No: 3-167/B-10/B, G Floor, Sri Ram Nagar, Sri Krishna Nagar Road, Suraram Village, Suraram, Qutubullapur, IDA Jeedimetla, Medchal–Malkajgiri District, Hyderabad, Telangana Pin: 500055 -----</p> <p><b>2)Dr. P. SANTOSH KUMAR PATRA</b></p> <p><b>3)MUTHE NAGA RAJA SRI</b></p> <p><b>4)EANSANPALLY AKANKSHA</b></p> <p><b>5)POTAKARI SWAPNA</b></p> <p><b>6)BURRE VIDYA</b></p> <p><b>7)Dr. S.SARAVANAKUMAR</b></p> <p>Name of Applicant : NA</p> <p>Address of Applicant : NA</p> <p>(72)Name of Inventor :</p> <p><b>1)NARAYANANAN MADESHAN</b> Address of Applicant :Dr.M.Narayanan Plot No: 3-167/B-10/B, G Floor, Sri Ram Nagar, Sri Krishna Nagar Road, Suraram Village, Suraram, Qutubullapur, IDA Jeedimetla, Medchal–Malkajgiri District, Hyderabad, Telangana Pin: 500055 -----</p> <p><b>2)Dr. P. SANTOSH KUMAR PATRA</b> Address of Applicant :Professor &amp; Principal Department of CSE St. Martin’s Engineering College, Secunderabad, Telangana, India -----</p> <p><b>3)MUTHE NAGA RAJA SRI</b> Address of Applicant :Department of CSE St. Martin’s Engineering College, Secunderabad, Telangana, India -----</p> <p><b>4)EANSANPALLY AKANKSHA</b> Address of Applicant :Department of CSE St. Martin’s Engineering College, Secunderabad, Telangana, India -----</p> <p><b>5)POTAKARI SWAPNA</b> Address of Applicant :Department of CSE St. Martin’s Engineering College, Secunderabad, Telangana, India -----</p> <p><b>6)BURRE VIDYA</b> Address of Applicant :Department of CSE St. Martin’s Engineering College, Secunderabad, Telangana, India -----</p> <p><b>7)Dr. S.SARAVANAKUMAR</b> Address of Applicant :Department of CSE St. Martin’s Engineering College, Secunderabad, Telangana, India -----</p>
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(57) Abstract :

A smart drainage system is essential for municipal architecture. We can immediately identify blockage by using smart drainage system. The system uses Internet of things [105] sensor technology. Whenever there is a block in drainage pipe [101], it is identified by temperature sensor [102], ultrasonic sensor [103], and pressure sensor [104]. A temperature sensor [102] is a device which is used to measure the temperature. It measures temperature of solid, liquid and air. Ultrasonic sensor [103] detects distance between the objects by using sound waves. Pressure sensor [104] is used to calculate rate of flow. At the certain point the above-mentioned sensors read the values [201]. The information is processed in IOT system [105] and it is further stored in cloud system [106]. Cloud system is the software application which is used to store data [108] by accessing the internet. If the sensor identifies blockage in pipe [203], then it intimates to concerned authority [107] that there is blockage in pipe [205]. Based on the information status, the manual work [109] is done. After the completion of manual work [109], again status of drainage pipe [101] is identified through sensors and intimates that there is no blockage [204] to concerned authority [205]. Hence by using smart drainage system, the drainage pipe [101] is checked frequently so that blockage is cleared. Figure related to the abstract is Fig. 5.1.

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