

DAFTAR PUSTAKA

- Adisti, Mentary & Vinensia. "Evaluasi Kecelakaan Lalulintas Selama Mudik Lebaran Melalui Jalur Darat Di Indonesia Tahun 2015 Dan 2016" *Jurnal Transportasi*, Vol 17.No 1, 2017
- A. Ali and M. Eid, "An automated system for Accident Detection," in *2015 IEEE International Instrumentation and Measurement Technology Conference (I2MTC) Proceedings*, May 2015, pp. 1608–1612. doi: 10.1109/I2MTC.2015.7151519.
- A. Suprayogi, H. Fitriyah, and T. Tibyani, "Sistem Pendeteksi Kecelakaan Pada Sepeda Motor Berdasarkan Kemiringan Menggunakan Gyroscope Berbasis Arduino.," vol. Vol 3 No 3 (2019), pp. 3079–3085, Jan. 2019.
- Arafat, 2016. SISTEM PENGAMANAN PINTU RUMAH BERBASIS Internet Of Things (IoT) Dengan ESP8266. *Technologia*, 7(4). [WWW Document], URL <https://widuri.raharja.info/index.php?title=SI1433478911> (accessed 06.10.22).
- Bastian Andry, 2014. "Perancangan Sistem Kontrol Keamanan Kendaraan Bermotor dengan Menggunakan Arduino Uno Berbasis Mikrokontroler ATmega328 melalui Media Handphone" [WWW Document], URL <https://widuri.raharja.info/index.php?title=KP1133469938> (accessed 06.10.22).
- Directorate of Land Transportation, "Manajemen Keselamatan Transportasi Jalan, Naskah Workshop Manajemen Keselamatan Transportasi Darat," Directorate of Land Transportation, Department of Transportation of Indonesia, Jakarta, 2007.
- Git [WWW Document], URL <https://eprints.uny.ac.id/65719/4/4.%20BAB%20II.pdf> (accessed 06.10.22).
- H. Yuliansyah "Uji Kinerja Pengiriman Data Secara Wireless Menggunakan Modul ESP8266 Berbasis Rest Architecture.," vol. Vol 10 No 2 (2016), pp. 68–77, Mei. 2016.
- InvenSense, "MPU-6000 and MPU-6050 Product Specification Revision 3.4," California, Aug. 2013. [Online]. Available: <https://invensense.tdk.com/wp-content/uploads/2015/02/MPU-6000-Datasheet1.pdf>
- Limantara, A.D., Purnomo, Y.C.S. & Mudjanarko, S.W., 2017. PEMODELAN SISTEM PELACAKAN LOT PARKIR KOSONG BERBASIS SENSOR ULTRASONIC DAN INTERNET OF THINGS (IOT) PADA LAHAN PARKIR DILUAR JALAN [WWW Document], URL

- <https://widuri.raharja.info/index.php?title=SI1433478911> (accessed 06.10.22).
- Lingga. An., 2017. [WWW Document], URL <http://e-journal.uajy.ac.id/11942/3/TS140722.pdf> (accessed 06.10.22).
- M. Marsa dan M. Syaryadi, "Penerapan Wearable Device untuk Mendeteksi Lansia Jatuh pada Rumah Aceh.," vol. Vol 4 No 3 (2012), pp. 12–18, 2019.
- N. Fathurrahman, A. Hendriawan, and S. Wasista, "Rancang Bangun Smart Vehicle untuk Mendeteksi dini Kecelakaan dan Keadaan Darurat," Electronical Engineering Study Program, State Electronic Polytechnics of Surabaya Campus PENS-ITS Sukolilo, Surabaya, Jan. 2011.
- National Police of Republic of Indonesia (locally known Polri), 6th November 2021. <https://korlantas.polri.go.id/>. (*references*)
- "NEO-6 series Versatile u-blox 6 GPS Datasheet," *u-blox*, 2011. [https://www.u-blox.com/sites/default/files/products/documents/NEO-6_DataSheet_\(GPS.G6-HW-09005\).pdf](https://www.u-blox.com/sites/default/files/products/documents/NEO-6_DataSheet_(GPS.G6-HW-09005).pdf) (accessed Mar. 13, 2022).
- R. Munir, "Pengantar Logika Fuzzy," *Informatik Engineering*. - STEI ITB, p. 95, 2007
- S. Kusumadewi and H. Purnomo, *Aplikasi Logika Fuzzy Untuk Mendukung Keputusan*. Yogyakarta: Graha Ilmu, 2004.
- Sugiyanto G, & Santi M Y. "Karakteristik Kecelakaan Lalu Lintas dan Pendidikan Keselamatan Berlalulintas Sejak Usia Dini: Studi Kasus di Kabupaten Purbalingga", *Jurnal Ilmiah Semesta Teknik*, Vol 18, No.1, pp 65-75. Mei 2015.
- T. N. Alifah, "Rancang Bangun Alat Deteksi Kecelakaan Sepeda Motor Berbasis Exponential Smoothing," *Program Studi Teknik Komputer*, Universitas Dinamika, p. 4-9, Surabaya, Jan. 2020.
- Winardi and S. Abdullah, "Pengenalan GPS dan Penggunaannya," *Coral Reef Rehabilitation and Management Program (COREMAP)*, Jakarta, 2006. [Online].
Available: <https://docplayer.info/storage/64/51521504/1646902871/XeE60IIWM2UU0tf8WqB61A/51521504.pdf>
- Y. N. Rizaldi, "Pelacakan Lokasi Sepeda Motor Menggunakan Modul GPS UBLOX NEO 6M DAN GSM SIM800L," *PROGRAM STUDI Tek. ELEKTRO Fak. Tek. Univ. MUHAMMADIYAH Surak.*, p. 14, 2019.
- Sutra Beben, Kuswanto Heri, "Analisis Perbandingan Fuzzy Logic Metode Tsukamoto, Sugeno, Mamdani Dalam Penentuan Keluarga Miskin" *Program Studi Tek. Informatika, STIMIK Sumedang, Indonesia.*, Vol.10, No 02, Juli 2019.

DAFTAR LAMPIRAN

Lampiran 1 : *Snippet* script sistem deteksi kecelakaan kendaraan

```
#include "I2Cdev.h"
#include "MPU6050_6Axis_MotionApps20.h"

#if I2CDEV_IMPLEMENTATION == I2CDEV_ARDUINO_WIRE
#include "Wire.h"
#endif

#include <Wire.h>
#include <WiFiEsp.h>
#include <WiFiEspClient.h>
#include <PubSubClient.h>
#include <SoftwareSerial.h>
#include <TinyGPS.h>
#include "fis_header.h"

MPU6050 mpu;

bool dmpReady = false; // set true if DMP init was successful
uint8_t mpuintStatus; // holds actual interrupt status byte from MPU
uint8_t devStatus; // return status after each device operation (0 = success, !0 = error)
uint16_t packetSize; // expected DMP packet size (default is 42 bytes)
uint16_t fifoCount; // count of all bytes currently in FIFO
uint8_t fifoBuffer[64]; // FIFO storage buffer

Quaternion q; // [w, x, y, z] quaternion container
VectorFloat gravity; // [x, y, z] gravity vector
float ypr[3]; // [yaw, pitch, roll] yaw/pitch/roll container and gravity vector

volatile bool mpuinterrupt = false;
```

```
void dmpDataReady() {
    mpuInterrupt = true;
}

char server[] = "iot.anfrb.id";
String phpScript = "datamotor";

const char* mqttServer = "hairdresser.cloudmqtt.com";
const int mqttPort = 15981;
const char* mqttUser = "ckzqzjbz";
const char* mqttPassword = "DcYNRzKOMYuV";

const char* ssid = "biku.anfrb.id";
const char* pass = "2019_02_26";

int status = WL_IDLE_STATUS;
const int fis_gcR = 1;

FIS_TYPE g_fisInput[9];
FIS_TYPE g_fisOutput[1];

WiFiEspClient espClient;
PubSubClient client(espClient);
SoftwareSerial wifi(5, 6);

TinyGPS gps;
float lat = 0.0, lon = 0.0;
SoftwareSerial gpsSerial(3, 4);

const int MPU6050_addr=0x68;
int16_t AccX, AccY, AccZ, Temp, GyroX, GyroY, GyroZ;
int16_t t_AccX, t_AccY, t_AccZ;
float colX = 0, colY = 0, colZ = 0, velX = 0, velY = 0, velZ = 0;
float parah = 0, sedang = 0, normal = 0;
```

```
float t_parah = 0, t_sedang = 0, t_normal = 0;
char nilai;
char hasil[8];
String fuzzy;
char lokasi[14];

void setup() {
  Wire.begin();
  Wire.beginTransmission(MPU6050_addr);
  Wire.write(0x6B);
  Wire.write(0);
  Wire.endTransmission(true);

  Serial.begin(9600);
  gpsSerial.begin(9600);
  wifi.begin(9600);
  WiFi.init(&wifi);

  if (WiFi.status() == WL_NO_SHIELD) {
    Serial.println("WiFi shield not present");
    while (true);
  }

  while ( status != WL_CONNECTED) {
    Serial.print("Connecting to: ");
    Serial.println(ssid);
    status = WiFi.begin(ssid, pass);
  }

  Serial.println("Connected!");

  client.setServer(mqttServer, mqttPort);
  client.setCallback(callback);
  client.connect("esp8",mqttUser,mqttPassword);
```

```
mpu.initialize();

Serial.begin(9600);
// verify connection
Serial.println(F("Testing device connections..."));
Serial.println(mpu.testConnection() ? F("MPU6050 connection successful") : F("MPU6050 connection
failed"));

// load and configure the DMP
Serial.println(F("Initializing DMP..."));
devStatus = mpu.dmpInitialize();

// supply your own gyro offsets here, scaled for min sensitivity
mpu.setXGyroOffset(220);
mpu.setYGyroOffset(76);
mpu.setZGyroOffset(-85);
mpu.setZAccelOffset(1788); // 1688 factory default for my test

// make sure it worked (returns 0 if so)
if (devStatus == 0) {
    // turn on the DMP, now that it's ready
    Serial.println(F("Enabling DMP..."));
    mpu.setDMPEnabled(true);

    // enable Arduino interrupt detection
    Serial.println(F("Enabling interrupt detection..."));
    attachInterrupt(0, dmpDataReady, RISING);
    mpuIntStatus = mpu.getIntStatus();

    // set our DMP Ready flag so the main loop() function knows it's okay to use it
    Serial.println(F("DMP ready! Waiting for first interrupt..."));
    dmpReady = true;
```

```
// get expected DMP packet size for later comparison
packetSize = mpu.dmpGetFIFOPacketSize();
} else {
  // ERROR!
  // 1 = initial memory load failed
  // 2 = DMP configuration updates failed
  // (if it's going to break, usually the code will be 1)
  Serial.print(F("DMP Initialization failed (code ");
  Serial.print(devStatus);
  Serial.println(F(")"));
}
}
```