MOHAMMAD QAYYUM BIN VARISAI MOHAMMED

Mechatronics Engineer UG

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PROFILE

A soon to become Engineer who is modeled by creativity and passion. A generally creative person with a lot to bring to the table in different aspects might be it technical wise or business wise. My interests are mainly in the IoT, Analog, Microelectronic and Embedded Systems field range. Looking forward to decorating my palate by gaining experience with Tech Industry.

EDUCATION

Malaysian Matriculation Program (Science) May 2021
Selangor Matriculation College
CGPA: 4.0

Bachelor of Engineering (Hons) Mechatronic Engineering Present
University of Science, Malaysia
CGPA: 3.80

PROFESIONAL SKILL

- C++ programming
- Multisim
- Assembly Language
- JGRASP
- ORCAD
- FPGA
- Arduino
- SOLIDWORKS

PROJECT

One Stop Bill Payment System

- Constructed a system using C++ programming to carry out bill payment using various methods such as TnG and Debit.
- Customers are given the option of paying the bill in separate amounts or all at once with the system auto deducting the value intended from the original value and displaying it on the user interface with precision.

Car Parking Sensor

- Created a simple model of a car with front and back sensors to act as obstacle detectors.
- Since microprocessors were not allowed to be used, Infrared Sensors were built from scratch to act as obstacle detectors. The detected obstacles will trigger the IR sensor, activating a buzzer to act as a signal to the driver. The distance between the obstacle and sensor is governed using a variable resistor.

Smart Bus System

- Developed a model of a bus station revolutionized with smart applications to eliminate human physical work, suiting the requirements of the pandemic era.
- The project was divided into 4 parts which act as checkpoints for the passengers, the first part a checkpoint to measure the temperature of passengers which was conducted by integrating thermistors and a servo motor to govern the entrance gate to allow the passengers to pass through.
- The second part of the project overlooks the use of Built in FPGA linked to a touch sensor which is triggered by the passengers boarding the bus hence acting as a limitation device to the number of passengers that are allowed to board the bus at a time.
- The third part of the project also involved the use of FPGA built-in counter that activates the motor of the bus when the counter reaches 0, signaling that the bus is full and ready to go.
- The last part is necessary in conjunction with the pandemic era as seating arrangement is vital in adhering to the rules set by the government. Infrared sensors are placed at alternating seats to prevent passengers from sitting on them and will trigger a buzzer when done so.

IoT Integrated Dam Water Level Sensor and Release

- Developed a model of a dam integrated with IoT to activate the Water Level Sensor in detecting the height of the water in the dam. Once the Water Level Sensor is triggered depicting the high water level in the dam, a water pump is activated to drain the water from the dam to a conservation tank for domestic usage.
- The whole system was controlled using 2 AT89S51 microcontrollers and written in assembly language code using Keil uVision software. As assembly code was relatively unknown for us as well as the integration of IoT, sleepless nights were spent researching on the various example of code that would be valid for our project vision as well as IoT platforms.

Metal and Non-Metal Chute Sorter

- Developed a chute like system using Programmable Logic Control (PLC) using CX programmer and designer. The purpose of this sorting system is to filter non metal and metal items in groups four and release them into its respective bins for recycling and disposal purposes. Capacitive and Inductive sensors were used to detect the items and actuators in the form of solenoid valves and double actuating pneumatic cylinders were used as output.

IoT Integrated Smart Agriculture System

- A prototype of greenhouse was created with the Integration of IoT and consisted of 4 subsystems. The first subsystem being the roof of the greenhouse which housed a double axis solar panel which tracks sunlight and generated voltage to be used for the other subsystems. Apart from that the roof was made to be retractable using raindrop sensor and servo motor to lift and lower the roof to prevent excess rain water from submerging the plants. Blynk 2.0 was used to control the roof manually as well as track the voltage sum gathered by solar harvesting.
- The second subsystem was the IoT Integrated irrigation and plant monitoring system where the vitals of soil and plant surroundings were measured using humidity and soil moisture sensor. The data gathered by these sensors were displayed on the IoT mobile as well as web interface and the moisture readings were used to control the activation of dc water pumps to supply water to the plants. Arduino IoT Cloud was used as the IoT Platform.
- The third subsystem was represented by a fertilizer system where IoT mobile interface was used to control the flow of fertilizer to the plants in conjunction with the soil's pH reading. The last system was represented by a Insect Trap system where esp-32 cam was used as a video monitoring for the plants to detect insect and a water pump was used as a insecticide sprayer.

EXTRACURRICULAR ACTIVITY

I.D.E.A FAIR 2023 Present
Logistics Department

WAU ROCKETRY USM 2023
Social Media Manager
Marketing and Public Relations

IET USM Present
Head of Publicity Department

GABUNGAN ANAK PULAU PINANG (GAPP USM) Present
Vice Director

MATRICULATION STUDENT REPRESENTATIVE (JPP KMS) 2021
Head of Academic Department

STUDENT SOCIETY OF ELECTRICAL AND ELECTRONIC ENGINEERING (SEE) 2023
EXCO Research and Development

NATIONAL LEVEL SMART UNI HACKATHON 2023 2023

SPEAKER FOR IOT TALK SEE

LANGUAGE

- Malay - Advance
- English - Advance
- Mandarin - Advance

Reference

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