Appendix 2.2

Report of International Conference Presentation (1)

Name: (Presenter)	Dr. Asma Abu -Samah
Affiliation:	UKM, Malaysia
Project Title:	P2EI-WEALTH (Physiological and Psychological Edge Intelligence WEArable LoRa HealTH) System for Remote Indigenous Community and Disaster Recovery Operations
Name of International Conference: (Link to website)	The 15th International Conference on ICT Convergence https://ictc.org/
Title of Research Paper:	Application of Machine Learning for Panic Attack Detection using Health Wearable Sensors
Name of all Co-authors (if any)	Anis Najihah Abu Samah, Nor Fadzilah Abdullah, Rosmina Jaafar

Comments or feedback received at the conference:

(e.g. Questions or comments received by your presentation)

1. "How did you get the labels for the data and which dataset did you use"

- The Labels were established using extensive research background and structured as rules. Rules were then applied to the the nurse dataset.

2. "How did you target the choice of algorithms for your detection system?"

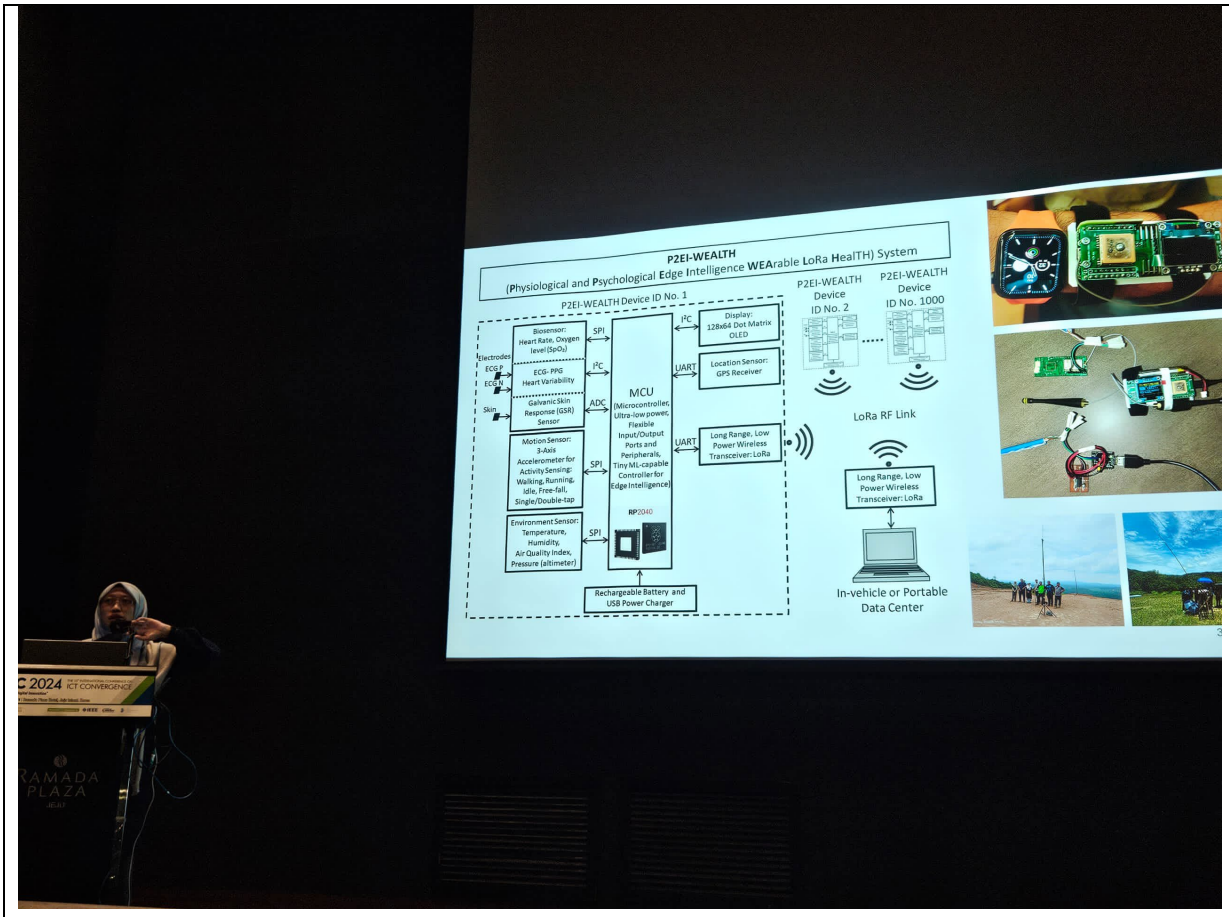
- The choice of algorithms was based on literature overview and via trial and test. The algorithms must be suitable to be implemented on the edge with limited ressources.

Contribution to the project:

(e.g. Summary of your session or other sessions related with your presentation)

The results from this particular work contribute to the establishment of rules to label panic attack on existing wearable data. Secondly, it also produced the modeling of psychological complexity (Panic attack) that can be deployed in the edge device.

Photos


P2EI-WEALTH
(Physiological and Psychological Edge Intelligence WEArable LoRa HealTH) System
P2EI-WEALTH Device ID No. 1
P2EI-WEALTH Device ID No. 2
P2EI-WEALTH Device ID No. 1000
Biosensor: Heart Rate, Oxygen level (SpO_2)
ECG-PPG Heart Variability
Galvanic Skin Response (GSR) Sensor
Motion Sensor: 3-Axis Accelerometer for Activity Sensing: Walking, Running, Idle, Free-fall, Single/Double-tap
Environment Sensor: Temperature, Humidity, Air Quality Index, Pressure (altimeter)
MCU
(Microcontroller, Ultra-low power, Flexible Input/Output Ports and Peripherals, Tiny ML-capable Controller for Edge Intelligence)
RP2040
Display: 128x64 Dot Matrix OLED
Location Sensor: GPS Receiver
Long Range, Low Power Wireless Transceiver: LoRa
Rechargeable Battery and USB Power Charger
LoRa RF Link
Long Range, Low Power Wireless Transceiver: LoRa
In-vehicle or Portable Data Center

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[Required Documents]

A) Presentation Materials (e.g., PPT slides)

B) Final Program of the conference

Reporter: _Asma' Abu Samah_____

Date: __06/11/2024_____

Appendix 2.2

Report of International Conference Presentation (2)

Name: (Presenter)	Assoc. Prof. Dr. Nor Fadzilah Abdullah
Affiliation:	UKM, Malaysia
Project Title:	P2EI-WEALTH (Physiological and Psychological Edge Intelligence WEArable LoRa HealTH) System for Remote Indigenous Community and Disaster Recovery Operations
Name of International Conference: (Link to website)	The 15th International Conference on ICT Convergence https://ictc.org/
Title of Research Paper:	Indigenous Community Connectivity: Enhancing LoRaWAN Performance through Machine Learning in Palm Oil Plantations
Name of all Co-authors (if any)	Asma' Abu Samah, Ammar Zaid Norabid, Nur Hasinah Najiah Maizan, Haider A.H. Alobaidy, Rosdiadee Nordin

Comments or feedback received at the conference:

(e.g. Questions or comments received by your presentation)

1) What are the differences between 2D and 3D distance?

Answer: 2D distance considers the lat/long between the LoRa GW and the LoRa end node (EN). Meanwhile, 3D distance includes elevation consideration.

2) Out of the 8 features, which are the most relevant features are selected for ML model?

Answer: The most relevant features are: (i) 2D distance, (ii) Azimuth, (iii) Elevation, and (iv) Tilt.

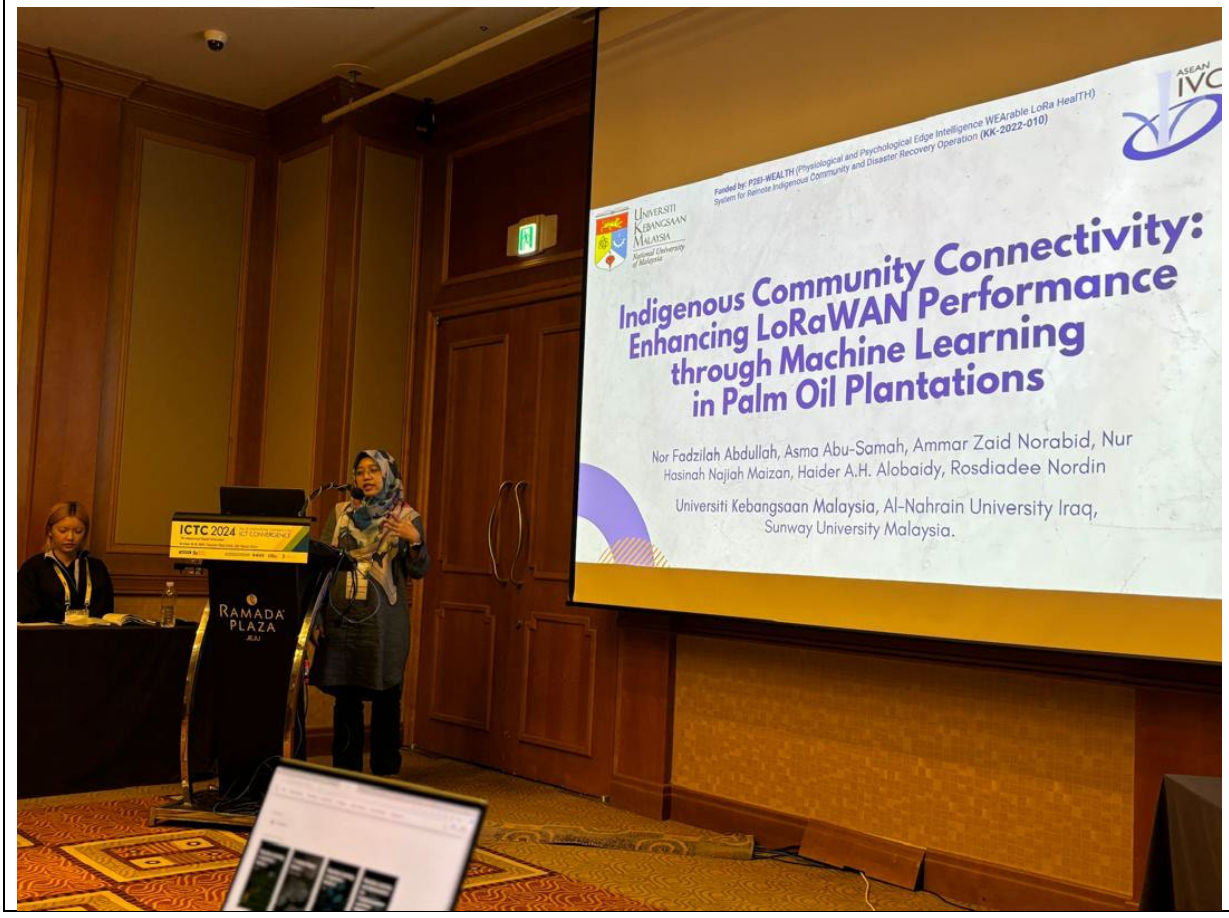
Contribution to the project:

(e.g. Summary of your session or other sessions related with your presentation)

The study is we believe the first to model the propagation of LoRa in Palm Plantation. The study directly measures LoRa effectiveness for our project, but indirectly it quantifies the relevance of LoRa to be used in agriculture monitoring system applied to Palm Plantation.

Photos

한국통신학회 창립 50주년 기념식
The NEW Wave
한국통신학회
창립 50주년 기념
KICS
한국통신학회


Indigenous Community Connectivity: Enhancing LoRaWAN Performance through Machine Learning in Palm Oil Plantations
Nor Fadzilah Abdullah, Asma Abu-Samah, Ammar Zaid Norabid, Nur Hasinah Najiah Maizan, Haider A.H. Alobaidy, Rosdiadee Nordin
Universiti Kebangsaan Malaysia, Al-Nahrain University Iraq, Sunway University Malaysia.
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[Required Documents]

C) Presentation Materials (e.g., PPT slides)

D) Final Program of the conference

Reporter: _Nor Fadzilah Abdullah_____

Date: __10/01/2025_____