

Fathi Mahdi Elsiddig Haroun

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Mobile Number: +60198312044 (Malaysia)

Birthday: May 12 1996

EDUCATION:

2019-2021 Master's in electrical engineering (FULL TIME) from Universiti Tenaga National (UNITEN) Malaysia, first class with honors.

2013-2018 Bachelor of engineering science with honor in Electronics Engineering (Industrial Electronics) (FULL TIME) from Sudan University of Science and Technology.

EXPERIENCE:

- **Firmware Engineer**
Advanced Microelectronics Solutions (AMS) Sdn Bhd, Malaysia | 2023-Present

Leading the development of IoT nodes and industrial IoT controllers.
- **Technical Lead**
Teknology ASV Sdn. Bhd. Malaysia | 2021-2023

Leading the development of mmWave-based radar based IoT applications.
- **R&D Research Officer**
University Tenaga National | Malaysia 2019-2021.

AI-powered satellite image monitoring system for power transmission lines.

Ultra-low-power wireless sensor nodes for IoT applications.

- **Intern (Maintenance & Installation)**
Digitech Service Center, Sudan | Mar 2016-Apr 2016

Maintenance and installation of LG devices.

- **Intern (Field Instrumentation)**
Khartoum Refinery (KRC) Co. Ltd, Sudan | Oct 2016-Nov 2016

Gained experience in field instrumentation.

- **Assistant Teacher**
Sudan University of Science and Technology, Sudan
| Nov-2018 to Aug-2019

Teaching lab for microcontrollers programming, computer interface, and C data structure.

Key Skills:

- Programing languages (Assembly, C, C++, python, MATLAB).
- Microcontrollers (STM32, TI, NXP, CH20X, PIC/ATMEL).
- FPGA (Xilinx) (Verilog/VHDL).
- Linux, embedded Linux and real time OS.
- Machine Learning and Deep Learning algorithms. (MATLAB,c++python).
- ML/DL frameworks (Keras, Tensorflow, Sklearn).
- Image processing (MATLAB/c++/python).
- PCB design (Kicad).
- Communication protocols (I2C, I2S, ISP, USART, SPI, RS485, RS232, USB).
- Debugging (JTAG, SWD).
- IoT network (LoRa WAN, Zigbee, Sigfox, BLE, GSM).
- Network protocols (HTTP/S, MQTT/S).

PUBLICATION:

Journal:

- [1] F. M. E. Haroun, S. N. M. Deros, and N. M. Din, "A review of vegetation encroachment detection in power transmission lines using optical sensing satellite imagery," *Int. J. Adv. Trends Comput. Sci. Eng.*, vol. 9, no. 1.4 Special Issue, pp. 618–624, 2020, doi: 10.30534/ijatcse/2020/8691.42020.
- [2] F. Mahdi Elsiddig Haroun, S. N. Mohamed Deros, M. Z. Bin Baharuddin, and N. Md Din, "Detection of Vegetation Encroachment in Power Transmission Line Corridor from Satellite Imagery Using Support Vector Machine : A Features Analysis Approach," *Energies*, vol. 14, no. 12, 2021,

doi: <https://doi.org/10.3390/en14123393>.

- [3] F. M. E. Haroun, S. N. M. Deros, and N. M. Din, “*Detection and Monitoring of Power Line Corridor From Satellite Imagery Using RetinaNet and K-Mean Clustering*,” IEEE Access, vol. 9, no. Vi, pp. 116720–116730, 2021, doi: 10.1109/access.2021.310655.
- [4] F. M. E. Haroun, S. N. M. Deros, Ammar Ahmed Alkahtani, and N. M. Din, “*Towards Self-Powered WSN: The Design of Ultra-Low-Power Wireless Sensor Transmission Unit Based on Indoor Solar Energy Harvester*,” *Electronics* 2022 11(13), 2077; <https://doi.org/10.3390/electronics11132077>.

Blueprint:

Zainab E.M.M, Ahmed Hassan Mohamed A.M, FME Haroun, “*Design of an Automated Apple Grading System Using Image Processing and Machine Learning Algorithm*”.

Conference:

- [4] F. M. E. Haroun, Ahmed Dziaul Islam Abdul Kadir, *et al.* “A Portable Distributed Cloud-Based Workspace Monitoring Platform Under The Covid-19 Pandemic Condition”, Pre-print, OCT 2021 doi: <https://doi.org/10.13140/RG.2.2.26084.09601>

MEMBERSHIP:

- Sudanese Engineering Council 2018-present.
- IEEE student member 2017-2018.

REFEREES:

1. Prof Dato I`r Dr. Norashidah Binti Mhd Din University Tenaga National UNITEN, Norashidah@uniten.edu.my (Malaysia).
2. Dr Hisham Ahmed Sudan University of science and technology SUST, hish_ahmed@gamil.com (Sudan).
3. Dr. Siti Noratiqah Binti Mohamed Deros University Tenaga Nasional UNITEN, Siti.Noratiqah@uniten.edu.my (Malaysia).
4. Dr. Maida Abd-Algadir Sudan University of science and technology SUST mayadanott13@gmail.com (Sudan).

SOCIAL CONTACTS:

LinkedIn: [linkedin.com/in/fathi-mahdi-a4a4bb14b](https://www.linkedin.com/in/fathi-mahdi-a4a4bb14b)

Github: <https://github.com/FathiMahdi>

Portfolio: https://fathimahdi.github.io/personal_page.github.io/

Personal website: <https://www.fathimahdielsiddig.com/>

Research Gate: <https://www.researchgate.net/profile/Fathi-Mahdi-Elsiddig-Haroun>