Fathi Mahdi Elsiddig Haroun

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Mobile Number: +60198312044 (Malaysia)

Birthday: May 12 1996

Nationality : Sudanese

ADDRESS:

A-17-5 Kondominium Unipark Jalan Us 1 Off Jalan Ikram-Uniten Taman Kajang, 43000 Selangor, Malaysia.

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, optimizing firmware for energy efficiency.

- **Technical Lead**
  Teknology ASV Sdn. Bhd. Malaysia | 2021-2023

  Leading the development of mmWave-based radar IoT applications, optimizing hardware and firmware for real-time data acquisition and processing.

- **R&D Research Officer**
  University Tenaga National | Malaysia 2019-2021.

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

Designed an ultra-low-power wireless sensor node that harvests ambient light for self powering IoT applications.

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

  Maintenance and installation of **LG** devices, gaining hands-on experience with embedded systems in consumer electronics.

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

  Gained experience in field instrumentation, working on control systems and sensor network for industrial applications.

- **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, NRF,CH20X RISCV, PIC/ATMEL).
- FPGA (Xilinx) (Verilog/VHDL).
- Linux, embedded Linux and real time OS.
- Embedded software.
- 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).
- Debugging (JTAG, SWD)
- AWS Cloud services.
- IoT network (LoRa WAN, Zigbee, Sigfox, GSM)

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:

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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