CURRICULUM VITAE

DR. MUHAMAD SAUFI MOHD KASSIM

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Education

- PhD. Agricultural Engineering, 2013, University Putra Malaysia, Serdang, Selangor, Malaysia
- M.S. Agricultural Engineering, 2004, University Putra Malaysia, Serdang, Selangor, Malaysia
- B. S. Agricultural Engineering, 1998, University Putra Malaysia. Serdang, Selangor, Malaysia

Research Interest

- Agricultural mechanization and Automation
- Imaging System
- Agricultural Robotic
- Farm Structures
- Aquaculture Engineering

Professional Membership & Learned Society

- Malaysian Society of Agricultural Engineers (MSAE)
- Board of Engineers Malaysia (BEM)

Appointments

• Senior Lecturer, Dept. of Biological & Agricultural Engineering, UPM	2014 – to date
• Research Officer, Institute of Advanced Technology, UPM	2010 – 2012
• Science Officer, Institute of Advanced Technology, UPM	2002 – 2010

Publications

- Zhu, Y.; Wan Hasan, W.Z.; Harun Ramli, H.R.; Norsahperi, N.M.H.; **Mohd Kassim, M.S**.; Yao, Y.(2025). Deep Reinforcement Learning of Mobile Robot Navigation in Dynamic Environment: A Review. *Sensors* **2025**, *25*, 3394.

- Mohd Jais, N.A.; Abdullah, A.F**.; Mohd Kassim, M.S**.; Abd Karim, M.M.; Abdulsalam, M.; Muhadi, N.(2024) Improved Accuracy in IoT-Based Water Quality Monitoring for Aquaculture Tanks Using Low-Cost Sensors: Asian Seabass Fish Farming. Heliyon 2024, 10, e29022.

- Abdullah AF, Wayayok A, **Kassim MSM,** Jamaluddin A. (2023).Smart farming for sustainable rice production: An insight into applications, challenges and future prospects. Rice Science; 2023.

- Shukri, A. A. M., Jamaludin, D., **Kassim, M. S. M**., & Hamzah, M. H. (2023). Development of Decision Support System (DSS) for Greenhouse Ventilation and Cooling Control. *Advances in Agricultural and Food Research Journal*, *4*(2).

- Bomoi, M. I., Nawi, N. M., Abd Aziz, S., & **Kassim, M. S. M.** (2023). Application of Artificial Neural Networks and Genetic Algorithm for the Prediction of Grain Loss from a Medium-sized Combine Harvester. *Évora, Portugal*, 129.

- Bomoi, M. I., Nawi, N. M., Abd Aziz, S., & **Mohd Kassim, M. S**. (2022). Sensing technologies for measuring grain loss during harvest in paddy field: A review. *AgriEngineering*, *4*(1), 292-310.

- Husin, N. A., Khairunniza-Bejo, S., Abdullah, A. F., **Kassim, M. S.**, & Ahmad, D. (2022). Multi-temporal analysis of terrestrial laser scanning data to detect basal stem rot in oil palm trees. *Precision Agriculture*, *23*(1), 101-126.

- Nasidi, N. M., Wayayok, A., Abdullah, A. F., & **Kassim, M. S. M.** (2021). Spatio-temporal dynamics of rainfall erosivity due to climate change in Cameron Highlands, Malaysia. *Modeling Earth Systems and Environment*, *7*(3), 1847-1861.

- Nasidi, N. M., Wayayok, A., Abdullah, A. F., **Kassim, M. S**., & Shanono, N. J. (2021). Spatial variability of soil erodibility in response to different agricultural land use at highland farms. *Basrah Journal of Agricultural Sciences*, *34*, 41-53.

- Aljawadi, R. A., Ahmad, D., Nawi, N. M., **Kassim, M. S**., & Ismail, W. I. (2021). A review of the in-field transporting machines currently used in oil palm plantations in malaysia. *Basrah Journal of Agricultural Sciences*, *34*, 119-137.

- Hadi, M. K., **Kassim, M. S. M**., & Wayayok, A. (2021). Development of an automated multidirectional pest sampling detection system using motorized sticky traps. *IEEE Access*, *9*, 67391-67404. DOI10.1109/ACCESS.2021.3074083, IEEE Access. Vol 9 (2021) page 67391 - 67404. (Q1, IF = 3.745)

- Izat Jaris Dzulkifli, **Muhamad Saufi Mohd Kassim** and Siti Khairunniza Bejo (2021). Development of 360-degree imaging system for fresh fruit bunch (FFB) identification. Journal of Agricultural and Food Engineering 4 (2020) 0028: 1-9

- Tukur D. Abdulkadir, Muhammad R. Mahadi, Aimrun Wayayok and **Muhamad S.M. Kassim**. 2021. Analytical Comparison between the Speed of Screw and Crank-Rocker BasedPick and Place Mechanisms for Seedling Tray Seeding Machine. Basrah J. Agric. Sci., 34(Special Issue 1), 108-118, 2021 ISSN 1814 – 5868 E-ISSN: 2520-0860

- Nuraddeen M. Nasidi, Aimrun Wayayok, Ahmad F. Abdullah, **Muhamad S.M. Kassim** and Nura J. Shanono. (2021). Spatial variability of soil erodibility in response to different agricultural land use at highland farms. Basrah J. Agric. Sci., 34(Special Issue 1), 41 -53, 2021 ISSN 1814 – 5868 E-ISSN: 2520-0860

- NM Nasidi, **A Wayayok**, AF Abdullah, **MSM Kassim**. 2021. Dynamics of potential precipitation under climate change scenarios at Cameron highlands, Malaysia. SN Applied Sciences 3 (3), 1 - 17

- Husin, N. A., Khairunniza-Bejo, S., Abdullah, A. F., **Kassim, M. S. M**, & Ahmad, D. (2021). Multitemporal analysis of terrestrial laser scanning data to detect basal stem rot in oil palm trees. *Precision Agriculture*, 1 -26.

- Husin, N. A., Bejo, S. K., Abdullah, A. F., **Kassim, M. S. M**., & Ahmad, D. (2021). Relationship of Oil Palm Crown Features Extracted Using Terrestrial Laser Scanning for Basal Stem Rot Disease Classification. *Basrah Journal of Agricultural Sciences*, 34, 1 -10.

- Husin, N. A., Khairunniza-Bejo, S., Abdullah, A. F., **Kassim, M. S. M.,** Ahmad, D., & Azmi, A. N. (2020). Application of Ground-Based LiDAR for Analysing oil palm canopy properties on the occurrence of Basal Stem Rot (BSR) Disease. *Scientific Reports*, 10(1), 1 -16.

- Husin, N. A., Khairunniza-Bejo, S., Abdullah, A. F., **Kassim, M. S. M.,** Ahmad, D., & Aziz, M. H. (2020). Classification of Basal Stem Rot Disease in Oil Palm Plantations Using Terrestrial Laser Scanning Data and Machine Learning. *Agronomy*, 10(11), 1624.

- Husin, N. A., Khairunniza–Bejo, S., Abdullah, A. F., **Kassim, M. S. M**., & Ahmad, D. (2020). Study of the oil palm crown characteristics associated with Basal Stem Rot (BSR) disease using stratification method of point cloud data. *Computers and Electronics in Agriculture*, 178, 105810.

- Nuraddeen Mukhtar Nasidi, Aimrun Wayayok, Ahmad Fikri Abdullah, and **Muhamad Saufi Mohd Kassim**. 2020. Vulnerability of Potential Soil Erosion and Risk Assessment at Hilly Farms using IfSAR Technology. Algerian Journal of Engineering and Technology 02 (2020) 000–000. Page 1 - 8

- Nuraddeen Mukhtar Nasidi, Aimrun Wayayok, Ahmad Fikri Abdullah, and **Muhamad Saufi Mohd Kassim.** 2020. Current and Future Intensity-Duration-Frequency Curves based on Weighted Ensemble GCMs and Temporal Disaggregation. Sains Malaysiana 49(10)(2020): 2359-2371 http://dx.doi.org/10.17576/jsm-2020-4910-03 Q4 IF = 0.643

- N. M. Nasidi, A. Wayayok, A. F. Abdullah and **M. S. M. Kassim**. 2020. Susceptibility to Soil Erosion and Risk Assessment at Hilly Farms Using Geospatial Techniques. Journal of Engineering Technology and Applied Physics, Special Issue 1 (2020), pages 6-13. e-ISSN: 2682-8383. https://doi.org/10.33093/jetap.2020.x1.2

- Azuan, N.H., Khairunnniza-Bejo, S., Abdullah, A.F., **Kassim, M.S.M.**, and Ahmad, D. (2019). Analysis of Changes in Oil Palm Canopy Architecture from Basal Stem Rot Using Terrestrial Laser Scanner. *Plant Disease*. 103(12):3218-3225.

- Husin, N. A., Khairunniza-Bejo, S., Abdulllah, A. F., **Kassim, M. S. M**., & Ahmad, D. (2019). Effects of Basal Stem Rot on Oil Palm Inter-frond Angles for Different Severity Levels. *Journal of Advanced Agricultural Technologies*. 6(2): 113-117.

- Nur Atirah Muhadi, Ahmad Fikri Abdullah, & **Muhamad Saufi Mohd Kassim. (2019).** Improvement Of Digital Elevation Model (DEM) Using Data Fusion Technique For Oil Palm Replanting Phase. International journal of Image and Data Fusion. Taylor and Francis. Vol 10 No 3, 232-243 . 2019

- Abdullah, N., Nawi, N.M., Ding, P., & **Saufi, M.K.M.** (2019). Preliminary Study To Predict Moisture Content Of Jackfruit Skin Using Shortwave Near Infrared Spectroscopy Food Research 3(2): 128-132(April 2019)

- TD Abdulkadir, MR Mahadi, A Wayayok, **MSM Kassim**. 2019. Operational parameters affecting pneumatic paddy seeds handling using vacuum pressure. Agricultural Engineering International: CIGR Journal 21 (2)

- Tukur Daiyabu Abdulkadir, Muhammad Razif Mahadi, Aimrun Wayayok and **Muhamad Saufi Mohd Kassim**. 2019. Optimization of vacuum manifold design for seeding of SRI seedling tray. Cogent Engineering (2019), 6: 1681245 https://doi.org/10.1080/23311916.2019.1681245

- ZULFADHLI MUSTAFA AL BAKRI, **MUHAMAD SAUFI MOHD KASSIM**, AHMAD FIKRI ABDULLAH & HAZREEN HAIZI HARITH. (2018), Analysis of Oil Palm Leaf Phyllotaxis towards Development of Models to Determine the Fresh Fruit Bunch (FFB) Maturity Stages, Yield and Site-Specific Harvesting. **Pertanika Journal of Science and Technology.**

- WAN ISHAK, **SAUFI, M.K.M,** S. ABD AZIZ (2017). Adoption of on-the-go ORP sensor for estimation of macronutrients in oil palm plantation **Submitted** to Journal of 3 / 4 Precision Agriculture, Citation-Indexed Journal - Science Citation Index (JCR), [19 pages], 2017.

- SHARENCE NAI SOWAT, WAN ISHAK WAN ISMAIL, SITI KHAIRUNNIZA BEJO, MUHAMMAD RAZIF MAHADI AND **MUHAMAD SAUFI MOHD KASSIM** (2017). Design and Feasibility Study of a Surface-Irregularities Adaptive Tracked Crawler Based on Oil Palm Tree Morphological Features Journal of Engineering and Applied Sciences 12 (22): 5949-5955, 2017.

- Abdulkadir, T. D., Ismail, W. I. W., **Kasim, M. S. M**., & Bejo, S. K. (2016). SUITABILITY OF CAPSULE AS A PADDY COATING MATERIAL FOR THE SYSTEM OF RICE INTENSIFICATION (SRI). Jurnal Teknologi, 78(1-2).

- SULEIMAN. S, WAN ISHAK W.I, MUHAMMAD RAZIF. M, **MUHAMAD SAUFI M. K**. (2016). Performance of Mechanical Weeding Levels on Yield and Vegetative Component Of Rice Under The System Of Rice Intensification (Sri) At Tanjung Karang Irrigation Scheme, Malaysia. Academic Research International Vol.7(3) pg 62-72, June 2016

- N. A. MUHADI, A. F. ABDULLAH & **M. S. M. KASSIM** (2016). Quantification of Terrestrial Laser Scanner (TLS) Elevation Accuracy in Oil Palm Plantation for IFSAR Improvement. IOP Conference Series: Earth and Environmental Science. Vol.37, pg 1 -8.

- MUHAMMAD YAMIN*, WAN ISHAK WAN ISMAIL, **MUHAMAD SAUFI MOHD KASSIM,** SAMSUZANA ABD AZIZ, (2016). VRT Liquid Fertilizer Applicator for Soil Nutrient Management. Jurnal Teknologi 78: 1 -2 (2016), pg 73-78.

- **MUHAMAD SAUFI MOHD KASSIM** AND WAN ISHAK WAN ISMAIL (2014). Oil Palm Fruit Classifications by using Near Infrared Images. Research Journal of Applied Sciences, Engineering and Technology 7(11): 2200-2207, 2014 ISSN: 2040-7459 **(ISI CIJ)**

- **MUHAMAD SAUFI MOHD KASSIM,** WAN ISHAK WAN ISMAIL, ABDUL RAHMAN RAMLI AND SITIKHAIRUNNIZA BEJO.(2012). Oil palm fresh fruit bunches (FFB) growth determination system to support harvesting operation. Journal of Food, Agriculture & Environment Vol.10 (2): 620-625.2012 **(IF 0.4)**

- W. I. W. ISMAIL, R. M. HUDZARI, **M. K. M. SAUFI** AND L. T. FUNG (2012). Computer-controlled system for autonomous tractor in agricultural application. Journal of Food, Agriculture & Environment Vol.10 (2): 350-356.2012**(IF 0.4)**

- W.I. WAN ISHAK AND **M.K. MUHAMAD SAUFI** (2010), Development of Autonomous Travelling Device for Oil Palm FFB (Fresh Fruit Bunches) Harvester. Journal of Agricultural Science and Technology. ISSN 1939- 1250， USA, Oct 2010, Volume 4, Number 5 (Serial No.30). pp 68-77. 2010. **(Non CIJ)**

- NG, S., YUSOF, J. M., **SAUFI, M., KASSIM**, M., RAHMAN, K. A., & ISMAIL, N. (2009, February). IV-FMC: An automated vision-based part modeling and reconstruction system for flexible manufacturing cells. In Robotics and Biomimetics, 2008. ROBIO 2008. IEEE International Conference on (pp. 1383-1387). IEEE

Conference Proceedings/Academic Talks

- Kadir, K., Hasan, W. Z. W., Zaidi, M. S. A. A., **Kassim, M. S. M**., & Mustafa, M. F. (2022, September). Analysis Of Ground FFB Detection Via Real Sense Camera. In *2022 IEEE 8th International Conference on Smart Instrumentation, Measurement and Applications (ICSIMA)* (pp. 262-266). IEEE.

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- **MUHAMAD SAUFI MOHD KASSIM,** WAN ISHAK WAN ISMAIL, AND SITI KHAIRUNNIZA BEJO. (2016). Image Based Oil Palm Fresh Fruit Bunch Growth Modeling. Malaysian Oil Palm Board (MPOB), PILIPS & PalmMech Seminar 2016 Synchronising Labour & Mechanisation: Redesigning Approaches. Sandakan Sabah. 19-21 September 2016

- **MUHAMAD SAUFI MOHD KASSIM,** WAN ISHAK WAN ISMAIL, AND SITI KHAIRUNNIZA BEJO.(2016). Oil Palm Fresh Bunches(FFB) Harvesting Model. The 9th Thai Society of Agricultural Engineering International Conference. Bangkok. 8-10 September 2016.

- ZULFADHLI MUSTAFA ALBAKRI, **MUHAMAD SAUFI MOHD KASSIM** & HASYUZARIZA MUHAMAD TOBIB. (2016). Comparison Study On Oil Palm Fresh Fruit Bunch (FFB) Maturity Stages Determination Based On Color Recognition Model And Position Of FFB In Leaf Spiral. International Conference on Agricultural and Food Engineering, CAFEi201 6. Kuala Lumpur. 23-25 August 2016.

- **MUHAMAD SAUFI MOHD KASSIM,** WAN ISHAK WAN ISMAIL, ABDUL RAHMAN RAMLI AND SITI KHAIRUNNIZA BEJO.(2014). Image Clustering Technique in Oil Palm Fresh Fruit Bunch (FFB)Growth Modeling. 2nd International Conference on Agricultural and Food Engineering, CAFEi2014. Kuala Lumpur. Agriculture and Agricultural Science Procedia 2 (2014) 337 – 344

- WAN ISHAK WAN ISMAIL, **MUHAMAD SAUFI M.K.** AND M HUDZARI (2013). Camera Color Vision for Crop Ripeness Model. 2013 Society for Engineering in Agriculture Conference. Western Australia.22-25 September.

- RAMIN SHAMSHIRI, WAN ISHAK WAN ISMAIL AND **MUHAMAD SAUFI M.K** (2012), Design and Simulation of Control System for A Field Survey Mobile Robot Platform.International Conference on Agricultural and Food Engineering for Life (Cafei 2012) IOI Putrajaya. 26-28 November 2012.

- **MUHAMAD SAUFI M.K** AND WAN ISHAK WAN ISMAIL (2009), Multispectral Imaging to Determine Oil Palm FFB Maturity Stages: A Review'.International Advanced Technology Congress ATCi 2009. Putra World Trade Center (PWTC), Kuala Lumpur. 3-5 November 2009

- WAN ISHAK WAN ISMAIL AND **MUHAMAD SAUFI M.K.** (2009) 'Development of Autonomous Travelling Device for Oil Palm FFB Harvester'International Advanced Technology Congress ATCi 2009. Putra World Trade Center (PWTC), Kuala Lumpur. 3-5 November 2009

Patents & Copyright

- **Muhamad Saufi Mohd Kassim**, Wan Ishak Wan Ismail, Samsuzana Abd. Aziz & Muhamad Yamin (2018).NPK Data Recording System for Digital Soil Test Kit & Method Thereof, PI 2018002896

Research Grants

• 'Plug and Play' Modular Aquaponic System for Teaching and Learning. **(Leader)**	GIPP	2018– 2022	RM25,000
• Analysis And Design Of Robotic End Effector for Oil Palm Loose Fruit Collector **(Leader)**	GP-IPM	2019 – 2023	RM60,000
• Development of mechanised field operations for pineapple production. **(Member)**	GP-IPB	2020-2024	RM70,000
• Finite element analysis of mechanical response of Carica papaya L. under impact loading. ((**Member)**	FRGS	2020-2024	RM146,700
• Utilization of Appropriate Machinery and Sensing Technologies To Maximize The Yield and Quality Of Glutinous Rice **(Member)**	TRGS	2020-2024	RM371,400

Community or Industry Projects/Grants

• Sistem Pengairan Titis Automatik untuk Tanaman Limau Nipis Komuniti Orang Asli Sungai Banun, Gerik Perak	2024-2025	RM10,000
• Modifikasi Sistem Rawatan Air dan Integrasi Akuaponik untuk kelestarian Teknologi Hijau Akuakultur Komuniti Kampung Parit Abdul Hamid, Batu Pahat Johor. **(Member)**		

Professional Services (Journal Reviewer, editorial works, etc.)

• **Journal reviewer**	
Journal of Oil Palm Research	Since 2017
Journal Of Science and Technology (PERTANIKA)	2020-2025
Advances in Agricultural and Food Research Journal	2020-2025
Malaysian Journal of Analytical Sciences(MJAS)	2021
• **Conference reviewer**	
International Conference on Agricultural and Food Engineering	Since 2014
• **Conference committee**	
International Conference on Agricultural and Food Engineering	Since 2014

Teaching Experience

- Analysis and Design of Structures
- Automation in Agriculture
- Aquaculture Engineering
- Computer Aided Engineering Drawing
- Control System Engineering
- Fluid Power