CURRICULUM VITAE

Nur Azuan Husin
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Education

PhD in Biological & Agricultural Engineering, 2020, Universiti Putra Malaysia
Master of Science (Biological & Agricultural Engineering), 2016, Texas A&M University, USA.
Bachelor of Engineering (Biological & Agricultural), 2006, Universiti Putra Malaysia.

Areas of Interest

1. Remote Sensing
2. Precision Agriculture
3. Mechanization and Automation

Professional Qualification/ Membership/ Affiliation

1. Graduate Member, Board of Engineers Malaysia (BEM)
2. Member, American Society of Agricultural and Biological Engineers (ASABE)
3. Graduate Member, Institute of Engineers Malaysia (IEM)
4. Executive Member, Malaysian Society of Agricultural Engineers (MSAE)
5. Professional Technologist, Malaysia Board of Technologists (MBOT)
6. Member, Institution of Engineering and Technology (IET)
7. Member, Institution of Geospatial and Remote Sensing Malaysia (IGRSM)
8. Member, Academic Staff Association of Universiti Putra Malaysia (PPAUPM)

Appointments

Position	Duration
1. Senior Lecturer, Department of Biological and Agricultural Engineering, Faculty of Engineering UPM	June 2020 to date
2. Alumni Coordinator, Department of Biological and Agricultural Engineering	July 2020 to July 2023
3. Academic Coordinator, Department of Biological and Agricultural Engineering	September 2022 to October 2024
4. Executive Secretary II, Malaysian Society of Agricultural and Food Engineers (MSAE)	January 2023 to March 2025
5. Junior Research Associate, Smart Farming Technology Research Center (SFTRC), Faculty of Engineering, UPM	August 2021
6. Research Associate, Smart Farming Technology Research Center (SFTRC), Faculty of Engineering, UPM	November 2024 to date
7. Final Year Project (FYP) Coordinator, Department of Biological and Agricultural Engineering	March 2025 to date

Research Grant

Project Title	Amount (RM)	Year	Source of Fund	Status
1. Drone Application for Ganoderma boninense Disease Detection in Oil Palm Plantation (Main Researcher)	60,500	2021-2025	GP-IPM (UPM)	Ongoing
2. Extension Of Electrical Resistance (ER) Based Basal Stem Rot (BSR) Detection That Includes Macro Monitoring at Plantation and Nursery Level with Application of Treatment (Project members)	454,000	2020-2022	PRGS (MOE)	Completed

Intellectual Properties

Copyright

Khairunniza-Bejo, S., **Azuan, N**., Abdullah, A.F., Kassim, M.S.M. (2022). Crown Biometrics System for Ganoderma Boninense Infection Detection in Oil Palm. [LY2021W06050]

Publications

Journals

1. **Husin, N. A.**, Ridu, R. C., Noh, N. M., & Bejo, S. K. (2025). Growth Monitoring of Healthy and BSR-Infected Oil Palm Seedlings Using Ground-based LiDAR. *Pertanika Journal of Science & Technology,*
2. Mohd Johari, S. N. A., Khairunniza-Bejo, S., Mohamed Shariff, A. R., **Husin, N. A.**, Mohd Masri, M. M., & Kamarudin, N. (2025). Effect of datasets size on the machine learning performance of the bagworm, Metisa plana (Walker) infestation using UAV remote sensing. *Journal of Plant Diseases and Protection*, 132(1), 1-17.
3. Johari, S. N. A. M., Khairunniza-Bejo, S., Shariff, A. R. M., **Husin, N. A.**, Masri, M. M. M., & Kamarudin, N. (2023). Detection of Bagworm Infestation Area in Oil Palm Plantation Based on UAV Remote Sensing Using Machine Learning Approach. *Agriculture*, 13(10), 1886.
4. Haw, Y. H., Hum, Y. C., Chuah, J. H., Voon, W., Khairunniza-Bejo, S., **Husin, N. A.**, Yee, L. and Lai, K. W. (2023). Detection of Basal Stem Rot Disease Using Deep Learning. *IEEE Access.*
5. Haw, Y. H., Lai, K. W., Chuah, J. H., Bejo, S. K., **Husin, N. A.**, Hum, Y. C., Yee, L., Tee, C.A.T., Ye, X. & Wu, X. (2023). Classification of basal stem rot using deep learning: a review of digital data collection and palm disease classification methods. *PeerJ Computer Science*, 9, e1325.
6. Johari, S. N. A. M., Khairunniza-Bejo, S., Shariff, A. R. M., **Husin, N. A.**, Masri, M. M. M., & Kamarudin, N. (2023). Automatic Classification of Bagworm, Metisa plana (Walker) Instar Stages Using a Transfer Learning-Based Framework. *Agriculture*, 13(2), 442.
7. **Husin, N. A.**, Khairunniza-Bejo, S., Abdullah, A. F., Kassim, M. S., & Ahmad, D. (2021). Multi-temporal analysis of terrestrial laser scanning data to detect basal stem rot in oil palm trees. *Precision Agriculture*, 1-26.
8. **Husin, N. A.**, Bejo, S. K., Abdullah, A. F., Kassim, M. S., & 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.
9. Noor Azmi, A. N., Bejo, S. K., Jahari, M., Muharam, F. M., Yule, I., & **Husin, N. A.** (2020). Early Detection of Ganoderma boninense in Oil Palm Seedlings Using Support Vector Machines. *Remote Sensing*, 12(23), 3920.
10. **Husin, N. A.**, Khairunniza-Bejo, S., Abdullah, A. F., Kassim, M. S., 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.
11. **Husin, N. A.**, Khairunniza-Bejo, S., Abdullah, A. F., Kassim, M. S., 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.
12. **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.
13. **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.

14. **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.
15. Noordin, M. N. A., Hudzari, R. M., **Azuan, N. H.**, Zainon, M. S., Mohamed, S. B., & Wafi, S. A. (2016). Development of Standard Approach for Sickle Blade Manufacturing. *International Journal on Advanced Science, Engineering and Information Technology*, 6(5), 740-745.
16. Razali, M. H., Roslan, S., Halim, A. S. M. A., Shokeri, A. F. M., & **Husin, N. A.** (2016). Design and Development of Innovative Highland Water Filtration System. *World Journal of Engineering and Technology*, 4(3), 383-390.

Conference Proceeding

1. **Husin, N.A.,** Khairunniza-Bejo, S., Azmi, A.N.N. & Ahmad, D. (2018). Comparison between linear and quadratic models for Ganoderma classification. In: 39th Asian Conference on Remote Sensing (ACRS 2018), 15-19 Oct. 2018, Renaissance Kuala Lumpur Hotel, Malaysia. 2018. p. 771-780.
2. Ssomad, M. A. H. A., **Azuan, H. N.**, Hudzari, R. M., Noordin, M. N. A., & Azizah, E. Water Quality Monitoring at Bukit Nenasi Highland Irrigation in Kuala Terengganu. Proceedings of 3rd National Conference of Knowledge Transfer (NCKT'16), Pulau Pinang, Malaysia. 2016. p. 11-16.

Book chapter and Professional Magazine

1. **Nur Azuan Husi** & Siti Khairunniza Bejo (2022) LiDAR in Oil Palm Disease Detection Coordinates, XVIII(4), 6-9.
2. Siti Khairunniza Bejo, Mahirah Jahari, **Nur Azuan Husin**, Mohd Hamim Abdul Aziz, Hasfalima (2024). Smart Agriculture: Modernising the Agricultural Industry. Ingenieur, 99(3), 56-61.
3. Muhammad Hazwan Hamzah, **Nur Azuan Husin**, Diyana Jamaludin, Hasfalina Che Man, Mahirah Jahari (2024). Nurturing Community Involvement in Agricultural Engineering Projects (2024) Ingenieur, 99(3), 67-72.
4. **Nur Azuan Husin** & Siti Khairunniza-Bejo. (2025). Application of Active Remote Sensing for Basal Stem Rot (BSR) Disease Detection in Oil Palm Plantation. In Smart Technology for Oil Palm Plantation: The Malaysian Experience (pp. 55–72). Universiti Putra Malaysia Press

Thesis

Nur Azuan Husin, Impact of Seed Cotton Compression on Cottonseed Quality. Master Thesis. Texas A&M University

Nur Azuan Husin, Development of Basal Stem Rot Disease Detection Model Using Terrestrial Laser Scanning Data of Oil Palm Crown. PhD Thesis. Universiti Putra Malaysia

Awards/Recognition

1. Silver Medal, Engineering Innovation & Exhibition 2023 (EIE 2023), Faculty of Engineering, UPM. A Comparison of UAV And TLS Data for Basal Stem Rot (BSR) Disease Detection in Oil Palm Plantation.
2. Bronze Medal Final Year Project, Final Year Project Exhibition 2023. Faculty of Engineering, UPM. Detection Of *Ganoderma Boninense* Infection Using UAV Thermal Image and Oil Palm Features.
3. Gold Medal as the Poster Presenter in the National Agricultural and Food Engineering Convention 2023 (NAFEC 2023).
4. Chairperson for Parallel Session in 6th International Conference on Agricultural and Food Engineering Conference (CAFEi 2023)
5. Excellence in Teaching 2022, in conjunction with the Innovation and Appreciation Program 2022, Faculty of Engineering, UPM.
6. Excellence Performance in Teaching Assessment – Semester 1 (2023), Faculty of Engineering, UPM
7. Excellence Performance in Teaching Assessment – Semester 2 (2023), Faculty of Engineering, UPM.
8. Silver Medal Final Year Project, Final Year Project Exhibition 2022. Faculty of Engineering, UPM. *Ganoderma Boninense* Detection Based on UAV Aerial Image of Oil Palm Trees.
9. Bronze Medal Final Year Project, Final Year Project Exhibition 2022. Faculty of Engineering, UPM. Growth Monitoring of Healthy and BSR-Infected Oil Palm Seedling using Ground-based LiDAR.

10. Gold Medal Final Year Project, Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM (Option Agricultural Informatics) 2021. Identification of Basal Stem Rot Disease in Oil Palm Seedlings using Thermal Imaging Technique.
11. Consolation Prize Winner for the Best Oral Presenter Award in the National Agricultural and Food Engineering Convention 2022 (NAFEC 2022).
12. Silver Award for the Best Oral Presenter Award in the National Agricultural and Food Engineering Convention 2025 (NAFEC 2025).
13. Bronze Awards. 11th Southeast Asian Agricultural and Food Engineering Student Chapter Annual Regional Convention 2025 (ARC2025).

Graduate Student Supervision

No.	Name	Level	Role	Status
1.	Siti Nurul Afiah Mohd Johari	PhD	Co-supervisor	Completed
2.	Mohd Shukri Ibrahim	PhD	Co-supervisor	Ongoing
3.	Islam Md Monirul	PhD	Co-supervisor	Ongoing
4.	Muhammad Ridhzuan bin Alias	Masters (ERP)	Suoervisor	Completed
5.	Mohd Rostam bin Tamjis	Masters (ERP)	Suoervisor	Completed
6.	Saidunkarnaen bin Bakhori	Masters (ERP)	Suoervisor	Completed

Student FYP Supervision

No.	Name	Title	Year
1.	Nurul Izzah Zainal Abidin	*Ganoderma boninense* Disease Detection Based on Oil Palm Tree Physical Properties using Top-View Aerial Image of UAV	2020/2021
2.	Putri Alisya binti Megat Shamrolshah	Identification of Basal Stem Rot Disease in Oil Palm Seedling Using Thermal Imaging Technique	2020/2021
3.	Ray Clement Anak Ridu	Growth Monitoring of Healthy and Basal Stem Rot (BSR)-Infected Oil Palm Seedling using Ground-Based Lidar	2021/2022
4.	Muhammad Iqbal Afiq Muhammad	*Ganoderma boninense* Detection Based on Unmanned Aerial Vehicle (UAV) Aerial Image of Oil Palm Trees	2021/2022
5.	Viviana Umie Tagang	*Ganoderma Boninense* Disease Detection and Classification Using Oil Palm Features and RGB Aerial Imagery of Oil Palm Trees	2022/2023
6.	Nur `Aliah Hanani Mohd Baktiar	Detection Of *Ganoderma Boninense* Using UAV Thermal Image and Oil Palm Features	2022/2023
7.	Muhamad Ammar Syazani Azree	Drone Thermal and High-Resolution RGB Camera with Machine Learning for the Detection of *Ganoderma* Disease in Oil Palm Plantation	2023/2024
8.	Muhammad Firdaus Ahmad Kamarul Nizam	Study of Hyperspectral Data for Infection of Ganoderma Disease in Oil Palm Trees	2024/2025

Professional Services (Journal Reviewer, etc.)

- **Journal reviewer**

1. Advances in Agricultural and Food Research Journal

2. Geocarto International
3. Journal of Plant Diseases and Protection
4. Precision Agriculture
5. Journal of Tropical Agriculture and Food Science
6. Current Plant Biology
7. Global Environmental Change
8. Wood Science and Technology
9. Journal of Oil Palm Research
10. European Journal of Remote Sensing
11. Current Plant Biology
12. Plant Methods
13. Cluster Computing
14. Agronomy
15. Theoretical and Applied Climatology
16. Journal of Experimental Agriculture International
17. Journal of Advances in Biology & Biotechnology
18. Journal of Experimental Agriculture International
19. Continental Shelf Research

- **Conference reviewer**
  5th IEEE International Conference on Artificial Intelligence in Engineering and Technology in 6th International Conference on Agricultural and Food Engineering

- **Invited Speaker**
  1. MPOB Oil Palm Plant Protection Webinar Series: Pests, Diseases and Weeds Serie 2/2021
  2. Smart Farming Research Centre (SFTRC) Webinar Series 3/2021
  3. AECA Webinar Series (2022) – Increase Plantation Management Efficiency with Precision Agriculture
  4. IoT Smart Agriculture Training 2024, Agricultural Engineering Division, Department of Agriculture, Serdang
  5. Academic Sharing Session with Students from Guangxi Agricultural Vocational-Technical College (2025)
  6. Program Inbound Mobility – Odisha University of Agriculture & Technology, Bhubaneswar, India

- **Committee Member**
  1. Committee Member (Secretary) for 11th Southeast Asian Agricultural and Food Engineering Student Chapter Annual Regional Convention 2025 (ARC 2025)
  2. Committee Member for 9th Southeast Asian Agricultural and Food Engineering Student Chapter Annual Regional Convention 2023 (ARC 2023)
  3. Committee Members (Winner and Award) for the 7th International Conference on Agricultural and Food Engineering (CAFEi 2025)
  4. Deputy Director (Registration) for the 7th International Conference on Agricultural and Food Engineering (CAFEi 2023)
  5. Director of Scientific Committee, National Agricultural and Food Engineering Convention (NAFEC 2023)
  6. Committee Members (Logistic, Exhibition and Technical) for the 5th International Conference on Agricultural and Food Engineering (CAFEi 2020)
  7. Committee Member for the Final Year Student Project Exhibition 2025, Faculty of Engineering, UPM.

- **Jury /Judge**
  1. 7th Southeast Asian Agricultural Engineering Student Chapter Annual Regional Convention (ARC 2021)
  2. Invited Assessor Project Service-Learning Malaysia (SULAM) ECV3011 and ENG3104
  3. Assessment Panel for Seminar of Graduate Students, Second Semester, Session 2023/2024, Institute of Plantation Studies (IKP), UPM

Teaching Experience

1. Engineering Mathematics II (ENG3002)
2. Geographic Information Systems Technology (EAB3412)
3. Engineering Properties of Agricultural Materials (EAB3014)
4. Research Methodology (MS in Emergency and Response) (EAB5100)
5. Information Engineering (MS in Emergency and Response) (EAB5412)
6. Independent Study (MS in Emergency and Response) (EAB5977)

Industrial and Community Linkage

No	Activity	Year	Role
1.	Joint Aquaculture Project (AquaBAE) with Suria Residences, Pajam, Negeri Sembilan	2022	Project leader
2.	Project Merchong Sweet Pumpkin by Farmer Community in Pekan, Pahang	2025-2026	Member