




**DR. PAULINE YEOH SHAN QING** 

Post Doctoral Research Fellow

Department of Biomedical Engineering
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BIOGRAPHY

Dr. Pauline Yeoh is a Postdoctoral Research Fellow at the Department of Biomedical Engineering, Universiti Malaya, Malaysia. She earned her Doctoral Degree through the Fast Track PhD program, *Graduate On Time with Distinction for Thesis*. Registered as a Graduate Engineer with the Board of Engineers Malaysia, Dr. Yeoh is passionate about advancing digital health and strives to bridge the gap between engineering and medicine through innovative research in computational intelligence for healthcare applications.

Her research involvement spans national, industrial, and international collaborations, including participation in the China–Malaysia ‘AI+’ New Materials Joint Laboratory between Universiti Malaya and Peking University. During her PhD, she was selected as one of only 30 participants for the Association of Commonwealth Universities Summer School 2022 and served as a visiting PhD student at Xuzhou Medical University, China. She actively fosters global academic engagement and multidisciplinary research dialogues.

ACADEMIC QUALIFICATION

- **PhD.BiomedEng, (Kejuruteraan Bioperubatan)**
Universiti Malaya
- **B.Eng(BiomedEng), (Kejuruteraan Bioperubatan)**
Universiti Malaya

ADMINISTRATIVE DUTIES

- **Fellow**
12 Feb 2024 - 10 Jan 2026 (*Residence College 12, Deputy Vice-chancellor (student Affairs)*)
- **Committee Member of Universiti Malaya iFEST 2026**
19 Mar 2026 - 11 Jun 2026 (*University Malaya*)

MEMBERSHIPS

- **BOARD OF ENGINEERS MALAYSIA (GRADUATE ENGINEER), MEMBER**
Since 2021 (*National*)

AWARD AND STEWARDSHIP

- **Gold Award**
2026, 25th Malaysia Technology Expo, (*International*)
- **5th Best Paper Award**
2022, Universiti Teknologi Malaysia, (*International*)

PUBLICATIONS

Article in Journal

WoS

1. Cheah, Kang Er; Yeoh, Pauline Shan Qing; Lai, Khin Wee; Wu, Shuilin; Muhamad, Farina (2026). Smart and injectable hydrogels for cancer treatment and other biomedical applications, *BIOMATERIALS ADVANCES*. 180. doi:10.1016/j.bioadv.2025.214624
2. Ng, Jun Chen; Yeoh, Pauline Shan Qing; Muhamad, Farina; Zhao, Xiaoxu; Wu, Shuilin; Wu, Xiang; Lai, Khin Wee (2026). Advancing biomaterial research with artificial intelligence, *BIOMATERIALS ADVANCES*. 180. doi:10.1016/j.bioadv.2025.214535
3. Yeoh, Pauline Shan Qing; Zhang, Yongting; Hasikin, Khairunnisa; Wu, Xiang; Lai, Khin Wee (2026). Variational autoencoders for anatomy-specific insights in medical imaging: A systematic review, *APPLIED SOFT COMPUTING*. 194. doi:10.1016/j.asoc.2026.114913
4. Usman, Juliana; Lee, Xin; Hew, Yi kei; Qing Yeoh, Pauline shan; Hamzah, Norhamizan; Chuah, Joon huang; Lai, Khin wee (2025). EXAMINING PAIN REDUCTION AND PHYSIOLOGICAL CHANGES WITH FAR-INFRARED GRAPHENE-BASED THERMOTHERAPY IN LOW BACK PAIN MANAGEMENT, *JOURNAL OF MECHANICS IN MEDICINE AND BIOLOGY*. 25(03). doi:10.1142/S0219519424500404
5. Yeoh, Pauline Shan Qing; Hasikin, Khairunnisa; Wu, Xiang; Goh, Siew Li; Lai, Khin Wee (2025). Trends and applications of variational autoencoders in medical imaging analysis, *COMPUTERIZED MEDICAL IMAGING AND GRAPHICS*. 126. doi:10.1016/j.compmedimag.2025.102647
6. Chen Ng, Jun; Shan Qing Yeoh, Pauline; Bing, Li; Wu, Xiang; Hasikin, Khairunnisa; Wee Lai, Khin (2024). A Privacy-Preserving Approach Using Deep Learning Models for Diabetic Retinopathy Diagnosis, *IEEE ACCESS*. 12, 145159-145173. doi:10.1109/ACCESS.2024.3469537
7. Chin, Shuang Yee; Dong, Jian; Hasikin, Khairunnisa; Ngui, Romano; Lai, Khin Wee; Yeoh, Pauline Shan Qing; Wu, Xiang (2024). Bacterial image analysis using multi-task deep learning approaches for clinical microscopy, *PEERJ COMPUTER SCIENCE*. 10. doi:10.7717/peerj-cs.2180
8. Shan Qing Yeoh, Pauline; Bing, Li; Goh, Siew Li; Hasikin, Khairunnisa; Wu, Xiang; Chai Hum, Yan; Kai Tee, Yee; Wee Lai, Khin (2024). An Efficient Neural Network for Segmenting Multiple Joint Tissues From Knee MRI With Hyperparameter Optimization: Data From the Osteoarthritis Initiative, *IEEE ACCESS*. 12, 123757-123770. doi:10.1109/ACCESS.2024.3454374
9. Yu Teh, Xin; Yeoh, Pauline Shan Qing; Wang, Tao; Wu, Xiang; Hasikin, Khairunnisa; Lai, Khin Wee (2024). Knee Osteoarthritis Diagnosis With Unimodal and Multi-Modal Neural Networks: Data From the Osteoarthritis Initiative, *IEEE ACCESS*. 12, 146698-146717. doi:10.1109/ACCESS.2024.3472654
10. Zhao, Zhen; Yeoh, Pauline Shan Qing; Zuo, Xiaowei; Chuah, Joon Huang; Chow, Chee-Onn; Wu, Xiang; Lai, Khin Wee (2024). Vision transformer-equipped Convolutional Neural Networks for automated Alzheimer's disease diagnosis using 3D MRI scans, *FRONTIERS IN NEUROLOGY*. 15. doi:10.3389/fneur.2024.1490829
11. Yeoh, Pauline Shan Qing; Goh, Siew Li; Hasikin, Khairunnisa; Wu, Xiang; Lai, Khin Wee (2023). 3D Efficient Multi-Task Neural Network for Knee Osteoarthritis Diagnosis Using MRI Scans: Data From the Osteoarthritis Initiative, *IEEE ACCESS*. 11, 135323-135333. doi:10.1109/ACCESS.2023.3338379
12. Yeoh, Pauline Shan Qing; Lai, Khin Wee; Goh, Siew Li; Hasikin, Khairunnisa; Wu, Xiang; Li, Pei (2023). Transfer learning-assisted 3D deep learning models for knee osteoarthritis detection: Data from the osteoarthritis initiative, *FRONTIERS IN BIOENGINEERING AND BIOTECHNOLOGY*. 11. doi:10.3389/fbioe.2023.1164655
13. Yeoh, P. S. Q., Lai, K. W., Goh, S. L., Hasikin, K., Hum, Y. C., Tee, Y. K., & Dhanalakshmi, S. (2021). Emergence of Deep Learning in Knee Osteoarthritis Diagnosis. *Computational Intelligence and Neuroscience*, 2021, 20. doi: 10.1155/2021/4931437

ESCI

1. Lim, Yun Hui; Yeoh, Pauline Shan Qing; Lai, Khin Wee (2025). Evaluating fine-tuned GPT models on different datasets in the healthcare domain, *INNOVATION AND EMERGING TECHNOLOGIES*. 12, 1-7. doi:10.1142/S2737599425500124

Scopus

1. Ng J.C., Muhamad F., Yeoh P.S.Q., Han Z., Qiu Z., Lai K.W., Zhao X. (2025). High-throughput thickness analysis of 2D materials

Books

1. Lai, K. W., & Yeoh, P. S. Q. (Eds). (2025). Biomedical Engineering: AI and Technological Innovations.

Chapter in Books

1. Mohd Redzwan, A., Yeoh, P.S.Q., Lai, K.W. (2024). Multi-label Convolutional Neural Network for Multiple Diseases Detection in Chest Radiographs. In: Lai, K.W., Yeoh, P.S.Q. (eds) Biomedical Engineering. Series in BioEngineering. Springer, Singapore. https://doi.org/10.1007/978-981-97-9294-8_5

Article in Proceeding

1. K. W. Lai, P. S. Q. Yeoh, S. L. Goh, K. Hasikin and X. Wu, "Depthwise Separable Convolutional Neural Network for Knee Segmentation: Data from the Osteoarthritis Initiative," 2022 International Conference on Healthcare Engineering (ICHE), Johor, Malaysia, 2022, pp. 1-5, doi: 10.1109/ICHE55634.2022.10179865.

Scopus

1. Yeoh P.S.Q., Adib M.H.M., Usman J., Razak N.A.A., Lai K.W. (2025). Spinal Alignment Analysis for Mattress Selection Across Different Age Groups and BMI Categories: A Preliminary Study, Ifmbe Proceedings. 129 IFMBE, 224-231. doi:10.1007/978-3-031-97374-1_23
2. Zhang Y., Wang H., Yeoh P.S.Q., Yu Z., Zou B., Hasikin K., Lai K.W., Wu X. (2025). Automatic Knowledge Graph Construction and Dynamic Fusion Method Using LLMs and Graph Embedding for Medical Informatics Education, Communications in Computer and Information Science. 2447 CCIS, 222-240. doi:10.1007/978-981-96-3735-5_17
3. Lai K.W., Yeoh P.S.Q., Goh S.L., Hasikin K., Wu X. (2023). Knee Osteoarthritis Diagnostic System Based on 3D Multi-task Convolutional Neural Network: Data from the Osteoarthritis Initiative, Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). 14408 LNCS, 41-51. doi:10.1007/978-3-031-47665-5_4

RESEARCH PROJECT

National

1. **2024 - 2025, Government Agency - Manage by UMCARES**
Penguatan Pendidikan Stem Bagi Generasi Muda Malaysia: Meningkatkan Prestasi Pelajar Dari Keluarga B40 (Co-Researcher)

International

1. **2025 - 2027, International Funding**
Transformative Generative Ai-based Patient-centric Healthcare In The Era Of Climate Change (Co-Researcher)

University

1. **2025 - 2026, University Grant**
Anthropometry As A Lens For Poverty And Wellbeing In Malaysia (Co-Researcher)
2. **2024 - 2025, University Grant - Managed by ADEC**
Bridging Engineering Theory And Practice: Development Of Lifelong And Practical Online Education Digital Framework With Advanced Technology (Principal Investigator(PI))

CONSULTANCY PROJECT

- **A Comprehensive Study On Sleep Patterns, Biomechanics and Personalized Recommendations for Optimal Mattress Selection Across Different Age Groups, Goodnite International Sdn Bhd**

15 Nov 2023 - 14 Dec 2024 (*University*)

PAPER PRESENTED

INVITED SPEAKER

1. -, Shaping Biomedical Engineering Frontier Workshop, Biomedical Engineering Student Club (University) (06 Nov 2024 - 06 Nov 2024)
2. Advancing Knee Osteoarthritis Diagnosis with Deep Learning: Bridging EMR and AI for Enhanced Clinical Outcomes, UM-NUS ACADEMIC WORKSHOP 2024, Institute for Health Innovation & Technology (iHealthtech) (International) (15 Oct 2024 - 15 Oct 2024)
3. 3D Deep Learning on Knee Magnetic Resonance Images on Osteoarthritis Assessment, AI & Telehealth Current Status & Future Direction: HKUST & UM, Universiti Malaya (International) (10 May 2023 - 10 May 2023)
4. Unlocking the Artificial Intelligence (AI) and Internet of Things (IoT), AUA-Universiti Malaya Overseas Study Program on Empowering the Young Generation with Foundational Competencies for the Future World of Work, Asian Universities Alliance (International) (18 Mar 2023 - 18 Mar 2023)

ORAL PRESENTER

1. Knee Osteoarthritis Diagnostic System Based on 3D Multi-task Convolutional Neural Network: Data from the Osteoarthritis Initiative, 7th Asian Conference on Pattern Recognition, ERiC Laboratory (International) (05 Nov 2023 - 08 Nov 2023)
2. Depthwise Separable Convolutional Neural Network for Knee Segmentation: Data from the Osteoarthritis Initiative, International Conference on Healthcare Engineering (ICHE), Universiti Teknologi Malaysia (International) (23 Sep 2022 - 24 Sep 2022)

ACADEMIC/ PROF. SERVICES

Evaluation

1. **(2025)** The Global Student Leadership Summit (gsls) 2026, University of Tsukuba, Ibaraki, Japan, International, (*Reviewer*)
2. **(2025)** Journal of Medical Internet Research, International, (*Reviewer*)
3. **(2025)** Peerj Computer Science, International, (*Reviewer*)
4. **(2025)** Biomedical Signal Processing and Control, International, (*Reviewer*)
5. **(2024)** Iet Image Processing, International, (*Reviewer*)
6. **(2024)** IEEE Access, International, (*Reviewer*)

SUPERVISION

Postgraduate Student

1. **(2025)** AI-ENHANCED POLYMERIC DRUG DELIVERY SYSTEMS FOR TARGETED LUNG CANCER THERAPY, WONG HSIN HUI
2. **(2025)** DEVELOPMENT OF TUMOR MICROENVIRONMENT-RESPONSIVE POLYMERIC CARRIERS FOR ANTI-TUMOR PEPTIDE DELIVERY, CHEAH KANG ER
3. **(2025)** INTERPRETABILITY ANALYSIS BASED ON ALZHEIMER'S DISEASE RECOGNITION, WANG HAN
4. **(2025)** ECHOCARDIOGRAPHIC PREDICTORS OF SUDDEN CARDIAC DEATH IN PATIENTS WITH DILATED CARDIOMYOPATHY USING MACHINE LEARNING, DILKUMAR A/L MARIMUTHU

5. **(2025)** Optical Microscopy Based Thickness Prediction of 2D Materials Using Machine Learning and Automated Segmentation, NG JUN CHEN
6. **(2025)** ADAPTIVE MULTI-MODAL DEEP LEARNING FRAMEWORK FOR ALZHEIMER'S DIAGNOSIS, LEE HUI YING

TEACHING

Master

1. **(2025)** WQD7004 - Programming for Data Science

Bachelor

1. **(2025)** KIB2012 - Biomedical Engineering Design 1
2. **(2024)** KIB2005 - Safety, Standard and Ethics in Biomedical Engineering
3. **(2023)** WIA2003 - Probability and Statistics

PATENT/ IPR

- **From Keys to Grasp: A Music and Mechanomyography-Based AI System for Functional Hand Recovery Monitoring**
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- **A TRANSFER LEARNING ASSISTED 3D DEEP LEARNING METHOD FOR KNEE OSTEOARTHRITIS DETECTION**
PATENT

SOCIAL RESPONSIBILITY ACTIVITIES

- Community Program Universiti Malaya: UMCARES@ranau At Kampung Kilimu, Ranau, Sabah, *(12 Dec 2025 - 15 Dec 2025) (National)*
- Advisor of Borderless Aid Volunteer Project (bravo) 8.0 2024/2025 (a Humanitarian Aid Project in Collaboration With Ngo in Minh Hoa, Vietnam), *(17 Aug 2025 - 23 Aug 2025) (International)*
- Advisor of Warrior Run 6.0 2024/2025, *(31 May 2025 - 31 May 2025) (International)*
- Accompanying Academic Staff for Outbound Mobility Program (short Term): Faculty of Engineering UM to Prince of Songkla University, Hatyai, Thailand from 25 to 27 November 2024, *(25 Nov 2024 - 27 Nov 2024) (International)*
- Advisor of Sukan Mahasiswa Universiti Malaya (sukmum) 2024/2025, *(01 Oct 2024 - 31 Dec 2024) (University)*
- Advisor of Royal Fitness Squad 2023/2024, *(12 Feb 2024 - 31 Aug 2024) (University)*
- Advisor of Borderless Aid Volunteer Project (bravo) 7.0 2023/2024 (a Humanitarian Aid Project in Collaboration With 2 Ngo in Krong Kampong Cham, Cambodia), *(12 Feb 2024 - 31 Aug 2024) (International)*
- Advisor of Warrior Run 5.0 2023/2024, *(12 Feb 2024 - 31 Aug 2024) (International)*