LEE KONG CHIAN SCHOOL OF MEDICINE

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE
Imperial College London

NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE
College of Engineering

National Healthcare Group
Adding years of healthy life

iAIM 2023

International Conference on AI in Medicine

5 - 7 August 2023

Nanyang Technological University, Singapore
Lee Kong Chian School of Medicine
Clinical Sciences Building
Ong Tiong Tat & Irene Tan Liang Kheng Auditorium

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Scientific Programme

TIME	Day 1 – 5 August 2023			
07:30 - 08:15	*Level 1, Clinical Sciences Building, Lee Kong Chian School of Medicine* Registration			All-day Poster Viewing on Level 4
08:15 – 08:30	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4, Lee Kong Chian School of Medicine* **Welcome Remarks** **Prof Joseph Sung** Distinguished University Professor Senior Vice-President (Health & Life Sciences) Dean, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore **Prof Louis Phee** Vice President (Innovation & Entrepreneurship) Dean, College of Engineering Tan Chin Tuan Centennial Professor in Mechanical Engineering Nanyang Technological University, Singapore **Prof Benjamin Seet** Deputy Group Chief Executive Officer (Education and Research) & Group Chief Research Officer National Healthcare Group, Singapore			
08:30 - 08:40	**Opening Remarks** **Mr Lim Chuan Poh** Chairman, Governing Board, Lee Kong Chian School of Medicine & Singapore Food Agency			
08:40 - 09:25	**Keynote 1** *"The Rapidly Changing Medical Practice in the Era of Artificial Intelligence"* **Prof Chin Jing Jih** Chairman, Medical Board, Tan Tock Seng Hospital *Moderator:* *Prof Joseph Sung* *Nanyang Technological University*			
09:25 - 10:10	**Keynote 2** *"Peering into the Future of Artificial Intelligence in Medicine" (Fireside Chat)* **Prof Andrew Ng** Founder of DeepLearning.AI *Moderators:* *Prof Louis Phee* *Nanyang Technological University* *Prof Cyril Leung* *Joint NTU-UBC Research Centre of Excellence in Active Living for the Elderly (LILY)*			
10:10 - 10:40	*Level 4* Tea break			
	Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4	*Seminar Room 7-1, Level 7*	*Seminar Room 7-2, Level 7*	

10:40 - 12:10	**Symposium 1** **Engagement of doctors and nurses with AI** Chair: Assoc Prof Tan Cher Heng Nanyang Technological University & Tan Tock Seng Hospital Speakers: *"Democratising Medical Care Using AI"* **Asst Prof Dennis Shung** Yale School of Medicine *"Overcoming the barriers to adoption of AI."* **Assoc Prof Goh Kim Huat** Nanyang Technological University *"Using AI to Empower Health Behaviour Change"* **Dr Chew Han Shi, Jocelyn** National University of Singapore ***Oral Presentations*** 1. AI Powered tech for Landmark Identification. **Swapnal Varma** 2. Evaluating performance of resident and consultant radiologist for mammogram assessment **Hao Du** 3. Knowledge, attitude and practice of AI **Pejy Arce Casem**	**Symposium 2** **Cutting-edge Technology that Might Impact Medicine** Chair: Prof Bo An Nanyang Technological University Speakers: *"Our Experience in Launching a Vendor-Neutral and Open Platform to Enable AI in Medical Imaging for Singapore Public Healthcare (AIM.SG Platform)"* **Mr Glenn Neo** IHiS (Integrated Health Information Systems) **Dr Charlene Liew** Changi General Hospital *"Emerging AI Technologies for Digital Health"* **Dr Yong Liu** Institute of High Performance Computing (IHPC), A*STAR ***Oral Presentations*** 1. 1. Deep Learning to predict cervical LN metastasis **Yihao Liu** 2. Predicting 5-year recurrence risk **Weixiang Weng** 3. 3. Histopath-based AI System in Cholangioca **Han Xiao** 4. 4. Gastric intestinal metaplasia staging **Louis HS Lau**	**Symposium 3** **Issues on Data Privacy and Patient Autonomy** Chair: Mr Stephen Kai-yi Wong Gilt Chambers Speakers: *"The Law on AI in Medicine: Regulation on Data Protection and Patient Autonomy"* ***A/Prof Hannah Yee-Fen Lim*** *Nanyang Technological University* *"Hong Kong Genome Project – a Journey to Genomic Medicine with Patients and Families"* **A/Prof Brian H.Y. Chung** The University of Hong Kong (HKU) *"Singapore's approach to data protection and AI governance: Healthcare and research"* **Ms Denise Wong** Personal Data Protection Commission, Singapore	All-day Poster Viewing on Level 4
	Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4			
	Olympus Lunch Symposium			

12:10 – 12:45	*"From Surgical/Endoscopic Interventions to Reporting and Quality Control: The Future of AI in the Operating Theatre"* **Mr Sailesh Conjeti** Global Product Lead, Artificial Intelligence Olympus Digital Health	
12:45 - 13:40	*Level 4* Lunch **(Poster presentations start at 13:00)**	
13:40 - 14:25	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4* **Keynote 3** *"Ethics of ChatGPT"* **Prof Julian Savulescu** Director, Centre For Biomedical Ethics, Yong Loo Lin School Of Medicine, National University of Singapore *Moderator:* *Prof Lim Kah Leong* *Nanyang Technological University*	
14:25 - 15:10	**Keynote 4** *"Pretrained AI Models for Target Discovery and Drug Design"* **Dr Le Song** CTO and Chief AI Scientist, BioMAP *Moderator:* *Assoc Prof Andrew Tan* *Nanyang Technological University*	
	Level 4	
15:10 - 15:30	Tea break	
15:30 - 16:15	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4* **Panel Discussion 1** Will AI Affect the Lives and Jobs of Medical Professionals?	
15:30 - 16:15	Moderator: **Prof May Lwin** Chair, Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore *Panels* **Dr Tan See Leng** Minister for Manpower & Second Minister for Trade and Industry, Singapore **Prof Kenneth Mak** Director-General of Health, Ministry of Health **Prof Miao Chun Yan** Chair, School of Computer Science and Engineering, Nanyang Technological University **Dr Zhou Lihan** Co-founder and Chief Executive Officer MiRXES	
	Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4 **Keynote 5**	

16:15 - 16:55	*"Digitization of Emergency Medicine"* **Prof Kendall Ho** Medical Director, HealthlinkBC Emergency iDoctors in Assistance (HEiDi) University of British Columbia *Moderator:* *Dr Ng Yih Yng* *Tan Tock Seng Hospital*	
16:55 - 17:35	**Keynote 6** *"Transforming Medical Education and Physician Training in the Era of AI"* **Prof Wong Tien Yin** Founding Head of Tsinghua Medicine Tsinghua University *Moderator:* *Assoc Prof Tan Cher Heng* *Nanyang Technological University & Tan Tock Seng Hospital*	
17:35 - 18:20	**Keynote 7** *"AI in Medicine: Position Statement from the Singapore Working Group"* **Prof Joseph Sung** Senior Vice-President (Health & Life Sciences) Dean, Lee Kong Chian School of Medicine *Nanyang Technological University* *Moderator:* *Prof Bo An* *Nanyang Technological University*	
18:30 - 20:00	*Clinical Sciences Building Level 1 Plaza, 11 Mandalay Road, Singapore 308232* **Conference Reception**	

<table>
<tr><th>TIME</th><th colspan="3">Day 2 – 6 August 2023</th><td rowspan="9">All-day Poster Viewing on Level 4</td></tr>
<tr><td rowspan="2">08:30
-
09:00</td><td colspan="3">Level 1, Clinical Sciences Building, Lee Kong Chian School of Medicine</td></tr>
<tr><td colspan="3">Registration</td></tr>
<tr><td rowspan="2">09:00
-
09:45</td><td colspan="3">Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4</td></tr>
<tr><td colspan="3">Keynote 8

“State of the Art in AI for Gastroenterology/Endoscopy”
Prof Prateek Sharma (Online)
President-elect of the American Society for Gastrointestinal Endoscopy

Moderator:
Prof Joseph Sung
Nanyang Technological University</td></tr>
<tr><td>09:45
-
10:30</td><td colspan="3">Keynote 9

“Medicine Made for You”
Prof Dean Ho
Director, The Institute for Digital Medicine (WisDM),
National University of Singapore

Moderator: Prof Yusuf Ali
Nanyang Technological University</td></tr>
<tr><td rowspan="2">10:30
-
11:00</td><td colspan="3">Level 4, Clinical Sciences Building</td></tr>
<tr><td colspan="3">Tea break</td></tr>
<tr><td rowspan="2">11:00
-
12:30</td><td>Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4</td><td>Seminar Room 7-1, Level 7</td><td>Seminar Room 7-2, Level 7</td></tr>
<tr><td>Symposium 4
Evidence of Clinical Benefits of AI tools

Chair:
Prof Jimmy So
National University Hospital Singapore

Speakers:

“AI Innovation in Health: Global Trend”
Assoc Prof Daniel Ting
Duke-NUS Medical School</td><td>Symposium 5 AI in Patient-centered care: The human touch

Chair:
Prof Kang Kwong Luke
Nanyang Technological University

Speakers:

“Patient-Centred Care in the Digital Age”
Dr Yew Tong Wei
National University Hospital</td><td>Symposium 6
Affordable AI for Medicine

Chair:
Dr Kelvin Tan
Ministry of Health, Singapore

Speakers:

“Transforming Healthcare with AI: Real-Life Case Studies from Singapore”</td></tr>
</table>

	"Co-piloting with AI During Clinical Colonoscopies - Summary of Evidence, Sharing of Experience" **Dr Frederick Koh** Sengkang General Hospital "Next generation mammography screening" **Assoc Prof Mikael Hartman (Online)** National University Hospital	*"Patient-Centered Shared Decision Making in Advance Care Planning"* **Prof Lim Ni Eng** Nanyang Technological University *"What AI Means to Patients"* **Ms Nidhi Swarup** Founder and President, Crohn's and Colitis Society of Singapore *"Patient autonomy: Big Decisions, Critical Moments"* **Phone Ko Joanna** Singapore General Hospital	**Dr Goh Han Leong** Integrated Health Information Systems *"Health forecasting using AI"* **Asst Prof Lim Jue Tao** Nanyang Technological University *"Counting the Savings: Examining the Economic Impact of AI in the Healthcare Landscape"* **Dr Ian Matthews** National University Hospital Singapore *"Is AI adding cost to the Healthcare system?"* **Dr. Kelvin Tsoi** Chinese University of Hong Kong	
12:30 – 13:05	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4* **"Growing high-demand talents through industry collaborative programs"** **Prof Cyril Leung** Scientific Director, Alibaba-NTU Singapore Joint Research Institute Co-Director, Joint NTU-UBC Research Centre of Excellence in Active Living for the Elderly (LILY)			All-day Poster Viewing on Level 4
13:05 – 14:00	*Level 4* Lunch **(Poster presentations start at 13:20)**			
14:00 - 14:45	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4* **Keynote 10** *"AI in the Future Healthcare System"* **Prof Tan Chorh Chuan** Ministry of Health, Singapore *Moderator:* *Prof Benjamin Seet* *National Healthcare Group, Singapore*			
14:45 - 15:30	**Keynote 11** *"Foundation Models and Opportunities in Medical Image Analysis"* Prof Tao Da Cheng University of Sydney *Moderator:* *Prof Luke Ong* *Nanyang Technological University*			

15:30 - 16:00	**Panel Discussion 2** *Medical Education for Future Healthcare Providers* Moderator: **Dr Ng Yih Yng** Director, Digital and Smart Health Office, Tan Tock Seng Hospital & Central Health Region, Singapore		
	Panels		
	Assoc Prof Michelle Jong Senior Consultant, Department of Endocrinology, Tan Tock Seng Hospital Group Chief Education Officer, National Healthcare Group, Singapore President, National Healthcare Group College	**Prof Wong Tien Yin** Chair Professor & Founding Head, Tsinghua Medicine, Tsinghua University, Beijing China Nanyang Professor of the Practice (Clinical), Nanyang Technological University Senior Advisor, SingHealth & Singapore National Eye Centre, Singapore	
	Prof Simon Kitto Visiting Professor, Lee Kong Chian School of Medicine, Nanyang Technological University		
16:00 - 16:30	*Level 4*		
	Tea break		
16:30 - 18:00	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4*	*Seminar Room 7-1, Level 7*	*Seminar Room 7-2, Level 7*
	Symposium 7 **AI in Healthcare: Decision Making** Chair: Asst Prof Wilson Goh Nanyang Technological University **Oral Presentation** 1. ML Techniques to predict timeliness of care among lung cancer patients **Arul Earnest** 2. Automated triage framework for largngeal cancer screening **Sean Lam** 3. A Data and Guideline-Driven Drug Mix and Dose Advisor for Individualized Type 2 Diabetes Management **Mila Nambiar** 4. Metabolic Digital Twins: characterizing diabetes **Arsen Batagov** 5. ChatGPT vs human experts: evaluating	**Symposium 8** **AI in Healthcare: Challenges** Chair: Dr Fan Xiuyi Nanyang Technological University **Oral Presentation** 1. 1. Machine learning identification of carrier of pathogenic and likely pathogenic **Christophe A.T.Stevens** 2. Risk perception, acceptance and trust **Max Cheung and Kendrick Chia Presenting on behalf of Wilson Goh** 3. Issue and challenges in building AI SaMD for vocal diseases **Seung-Mo Cho**	**Symposium 9** **Explainable AI for Medicine** Chair: Prof Irwin King The Chinese University of Hong Kong Speakers: *"Glass-box models for clinical data"* **Prof Paulo Lisboa (Online)** Liverpool John Moores University *"Interpretable Deep Learning for Healthcare: Where Are We Now?"* **Asst Prof Hao Chen** The Hong Kong University of Science and Technology **Oral Presentation** 1. A new interpretable Neural network-based rule model **Guerand Tristan Quentin** **2.** Computerized Cognitive Training for

	diagnostic performances **William Rojas-Carabali** 6. Uncertainty estimation: an alternative to external validation **Li Rong Wang**	4. AI Agency for breast cancer rehabilitation **Bo Gao** 5. Should AI predict patient behavior? **Max Drezga-Kleiminger** 6.The application of explainable artificial intelligence (XAI) in studying cognition: a scoping review **Shakran Mahmood**	Memory Functions in Adults with Mild Cognitive Impairment or at the Early Stage of Dementia: A Meta-analysis of Randomized Controlled Trials **Aaron Chan**	
18:00 - 18:15	Break and Transfer			
	Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4			
18:15 - 18:30	**Best Poster and Best Oral Presentation Awards** *Prof Louis Phee* *Nanyang Technological University* *Prof Benjamin Seet* *National Healthcare Group, Singapore*			
19:00 - 21:00	*Tanglin Club, 5 Stevens Road, Singapore 257814* Faculty Dinner			

TIME	Day 3 – 7 August 2023			
08:00 - 08:15	*Level 1, Clinical Sciences Building, Lee Kong Chian School of Medicine* Registration			
08:15 - 09:00	**Keynote 12** *"Trustworthy, Safe and Beneficial Foundation Models"* **Dr Aleksandra Mojsilovic** IBM Research *Moderator:* *Dr Fan Xiuyi* *Nanyang Technological University*			
	Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4	*Seminar Room 7-1, Level 7*	*Seminar Room 7-2, Level 7*	

09:00 - 10:30	**Workshop 1** AI for Ageless Aging **Invited Speakers:** 1. Martin J. McKeown 2. Zhiqi Shen 3. Hongyu Zhang	**Workshop 2** Aligning Large Language Models (LLMs) and Medicine: Dialogue between Computer Scientists and Physician Scientists **Speakers:** 1. Haibo Wang 2. Nicholas Anderson 3. Liang Lin 4. Kelvin Li 5. Nan Liu 6. Timothy L. Pruet 7. Peter Sarvari 8. Haitao Zheng	**Tutorial 1** Explainable AI and Mātauranga Māori For Diagnosis and Prognosis in Mental Health **Speakers:** 1. Wilson Goh 2. Maryam Doborjeh 3. Zohreh Doborjeh 4. Edmund Lai 5. Jimmy Lee 6. Pouroto Ngaropo 7. Sandra Potaka 8. Margaret Hinepo Williams 9. Sugam Budhraja 10. Balkaran Singh 11. Samuel Tan
10:30 - 11:00	*Level 4* Tea break		
11:00 - 12:30	**Workshop 1** AI for Ageless Aging **Invited Speakers:** 1. Martin J. McKeown 2. Zhiqi Shen 3. Hongyu Zhang	**Workshop 2** Aligning Large Language Models (LLMs) and Medicine: Dialogue between Computer Scientists and Physician Scientists **Speakers:** 1. Haibo Wang 2. Nicholas Anderson 3. Haitao Zheng 4. Kelvin Li 5. Liang Lin (Online) 6. Peter Sarvari	**Tutorial 1** Explainable AI and Mātauranga Māori For Diagnosis and Prognosis in Mental Health **Speakers:** 1. Wilson Goh 2. Maryam Doborjeh 3. Zohreh Doborjeh 4. Edmund Lai 5. Jimmy Lee 6. Pouroto Ngaropo 7. Sandra Potaka 8. Margaret Hinepo Williams 9. Sugam Budhraja 10. Balkaran Singh 11. Samuel Tan
12:30 - 14:30	*Level 4* Lunch		
14:30 - 16:00	*Ong Tiong Tat & Irene Tan Liang Kheng Auditorium, Level 4* **Workshop 3** Intensive Care Unit Smart Brain (ICU Brain) **Invited Speakers:** 1. Jane Wang 2. Chen Huanhuan 3. Cui Lizhen	*Seminar Room 7-1, Level 7* **Workshop 4** Harnessing the Power of Large Language Models in Clinical Medicine **Speakers:** 1. Joshua Yi Min Tung 2. Gerald Gui Ren Sng 3. Daniel Yan Zhen Lim	*Seminar Room 7-2, Level 7* **Tutorial 2** Advancing Healthcare with AI: Innovations in Life Science Tools and Applications in Genomic Analysis and Imaging **Speakers:** 1. Roy Tan 2. Meng Yang 3. Jiang Liu
	Level 4		

16:00 - 16:30	Tea break		
16:30 - 18:00	**Workshop 3** Intensive Care Unit Smart Brain (ICU Brain) **Invited Speakers:** 1. Jane Wang 2. Chen Huanhuan 3. Cui Lizhen	**Workshop 4** Harnessing the Power of Large Language Models in Clinical Medicine **Speakers:** 1. Joshua Yi Min Tung 2. Gerald Gui Ren Sng 3. Daniel Yan Zhen Lim	**Tutorial 2** Advancing Healthcare with AI: Innovations in Life Science Tools and Applications in Genomic Analysis and Imaging **Speakers:** 1. Roy Tan 2. Meng Yang 3. Jiang Liu

Abstracts

No.	Title	Presenter
~~1~~	~~Automated Triaging Medical Referral for Otorhinolaryngology Using Data Mining and Machine Learning Techniques~~	~~Chee Keong Wee~~
2	A Review on the Challenges of Artificial Intelligence in HealthCare Systems in Rural Areas	Adedeji Olugboja
3	Applied machine learning (ML) and microsensors fusion for hospital patient wellbeing and construction workplace safety & health monitoring use-cases	Yanhao Tan
4	Harnessing AI in Radiology to Augment Population Health	Jordan Sim
5	Knowledge, Attitude and Practice of Artificial Intelligence (AI) Among Filipino Physicians of Ilocos Training and Regional Medical Center (ITRMC): Basis for a Successful AI-Driven Health Care Technology Implementation Strategy	Pejy Arce Casem
6	Analysis of Intersectional Bias in a Novel Melanoma Image Classification Algorithm	Christopher Caligiuri
7	Deep learning to predict cervical lymph node metastasis from intraoperative frozen section of tumour in papillary thyroid carcinoma: a multicentre diagnostic study	Yihao Liu
8	Frontal Chest Radiographs for COVID-19 Pneumonia Severity: a Head-to-Head Study of Two Deep Learning Models	Nicole Wee
9	Predicting 5-year Recurrence Risk in Colorectal Cancer: Development and Validation of a Histology-Based Deep Learning Approach	Weixiang Weng
10	Machine Learning identification of carriers of pathogenic and likely pathogenic variants linked to familial hypercholesterolaemia in the UK Biobank.	Christophe A.T. Stevens
11	Ensemble Machine Learning Methods in Screening Electronic Health Records: A Scoping Review	Christophe A.T. Stevens
12	Machine-learning techniques to predict timeliness of care among lung cancer patients	Arul Earnest
13	3D U-Net for Automatic Segmentation of Breast Tumours	Lucas Leow

~~14~~	~~Machine Learning for social good (ML4SG) in healthcare: A systematic review and future research directions~~	~~Jiwat Ram~~
15	Predicting the risk of Diabetic Foot Amputation using Machine Learning methods	Chien Wei Oei
16	A Threshold-Varying Machine Learning Model Towards Personalized Nudging Of Healthy Behaviors	Zhi Peng Ong
17	Deep Learning Model and Application for the Diagnosis of Exudative Pharyngiti	Seo Yi Chng
18	Establishing a Computational Screening Framework to Identify Environmental Exposures Using Untargeted Gas-Chromatography High-Resolution Mass Spectrometry	Juni Kim
19	Automated Triage Framework for Laryngeal Cancer Screening	Sean Lam
20	Artificial intelligence (AI)-based advisory system for blood sugar management in elderly diabetics	Omedul Islam
21	A Histopathology-based Artificial Intelligence System Assisting the Screening of Genetic Alteration in Intrahepatic Cholangiocarcinoma	Han Xiao
22	Label-efficient Generalizable Deep Learning for Medical Image Segmentation	Ziyuan Zhao
23	Assessing the Performance of Machine Learning Models for Glaucoma Detection Across Ethnicities Using Optical Coherence Tomography Data	Chi Li
24	A2C-Based AI for Power Efficiency in Healthcare Tech	Tesfaye Mengistu Gelan
25	Harnessing BERTs for screening of studies for systematic reviews	Kiok Liang Teow
26	ChatGPT vs Human Experts: Evaluating Diagnostic Performance and Perspectives on AI Adoption in Ophthalmology	William Rojas-Carabali
~~27~~	~~Can Artificial Intelligence Replace Histopathologists in the Diagnosis of Breast Cancer?~~	~~Houda Lmalak~~
28	Methodologies to identify longitudinal patterns from measurements of COVID and physical activity data measured via smart devices	Varsha Gupta
29	Potential safety concerns in use of ChatGPT for peri-operative patient communication	Joshua YM Tung
30	Automatic speech recognition in medical education group discussions	Cher, Pei Hua
31	Potential and pitfalls of ChatGPT and natural language Artificial Intelligence models for Diabetes Education	Gerald Gui Ren Sng
32	AI Agency for Breast Cancer Rehabilitation: Enhancing Personalized Care and Co-creating Service Value through Human-AI Collaboration in Healthcare	Bo Gao
33	Exploring the use of large language models for summarizing medical documentation	Gerald Gui Ren Sng
~~34~~	~~Artificial Intelligence Generated Facial Images for Medical Education~~	~~Bingwen Eugene FAN~~
35	Feature analysis to detect early signs of knee OA (OAI dataset)	Cher, Pei Hua
36	With great computing power comes great responsibility. Should AI predict patient behaviour?	Max Drezga-Kleiminger
37	Development of an artificial intelligence-assisted voice analytic tool to assess the consciousness level of patients after sedated endoscopy.	Thomas Yuen Tung Lam
38	A multi-modality machine learning method is superior to operative link for gastric intestinal metaplasia staging in predicting gastric neoplasia development from intestinal metaplasia	Louis HS Lau

39	Impact of highly similar samples among microbiome data	Ruwen Zhou
40	Metabolic Digital Twins: Characterizing Diabetes Disease States and Predicting Future Progression	Arsen Batagov
41	Building Extractive Question Answering System to Support Human-AI Health Coaching Model for Sleep Domain	Iva Bojic
42	Automated Snake Classification on Mobile Application	Yu Zhang
43	EndoBuddy: AI in Upper GI Endoscopy	Susan Elias
44	Application of Machine Learning Models for Parkinson's Disease Risk Prediction Using Clinical Data	Bijak Rabbani
45	Artificial Intelligence Generated Peripheral Blood Film Images by Generative Adversarial Networks	Bingwen Eugene Fan
46	Inpatient Bed Exit Prediction using Edge based Privacy-Preserving In-Bed Human Pose Estimation: A Feasibility Study in a Singapore Tertiary Hospital	Yan Gao
47	Graph Convolutional Network with Self-Attention Pooling for the Prediction of Neutralizing Paratope Sequences of SARS-CoV2 Antibodies	Shamima Rashid
48	Should we reshape teaching approaches in the generative AI era? A descriptive study on ChatGPT's performance in Physiology questions.	W.A Nathasha V. Luke
49	An exploratory study of Personalized Model to Assist Real-Time Differentiation of Low-Grade Dysplasia and Intestinal Metaplasia Using Raman Spectroscopy	Yuchen Yang
50	A Machine Learning Study on Risk Factors for Sleep Insufficiency in 3-month-old Infants	Pavitra Krishnaswamy on behalf of Sukrit Gupta
51	Risk Perception, Acceptance and Trust of using Artificial Intelligence in Gastroenterology Practice: Survey from the Asia-Pacific Region	Wilson W.B. Goh
52	Cohort-centric machine learning strategies on genetic determinants of metabolic syndrome	Hong Pan
53	AI education to prepare future doctors for the digital health era: working with consumers, translators, and experts	Yu Ci Faye Ng
54	ChatGPT versus customized AI chat tool for anatomy education: An exploratory study	Sreenivasulu Reddy Mogali
55	A tale of 2 ChatGPTs: Exploring the role of generative AI in teaching medical ethics and ethical decision making	Emmanuel Tan
56	Enhancing Multi-Class Diabetic Retinopathy Classification Performance with Style-Based Generative Networks	Kabilan Elangovan
57	OphAI – Using Large Language Models (LLM) and Graph Technology for Clinical Decision Support in Ophthalmology	Kelvin Li
58	Empowering Parkinson Disease Patients to Understand Prognosis Using Patient-Reported Outcomes	Nasca Peng
59	Uncertainty Estimation: An Alternative to External Validation for Artificial Intelligence in Medicine	Li Rong Wang
60	Privacy-preserving continual learning methods for medical image classification: A comparative analysis	Liyuan Jin
61	Large Language Models in Anaesthesiology: Use of GPT for ASA Physical Status Classification	Daniel Lim
62	How Ready Are We for Medical AI Governance and Compliance?	Cameron Mavericks Choo
63	A New Interpretable Neural Network-Based Rule Model for Healthcare Decision Making	Guerand Tristan Quentin on behalf of Adrien Benamira

64	A Comparative Analysis of Vision Transformers and Convolutional Neural Networks for Diabetic Retinopathy Detection	Goh Jocelyn on behalf Elroy Ang
65	Effect of real-time computer-aided polyp detection system (ENDO-AID) on adenoma detection in endoscopists-in-training: a single-blind randomized controlled trial (ENDOAID-TRAIN study)	Louis Hs Lau
66	Using ChatGPT to score Eastern Cooperative Oncology Group (ECOG) performance status	Yan Zheng Daniel Lim
67	Integrating Machine-learning approaches into Depression Screening and Personalised Intervention	Geoffrey Tan
68	A Data and Guideline-Driven Drug Mix and Dose Advisor for Individualized Type 2 Diabetes Management	Mila Nambiar
69	Perception and Attitudes of Eye Patients and their Families Towards the Use of Virtual Clinics and Artificial Intelligence (AI) in Eye Diagnosis and Management: A Pilot Study	Wan Xi Ho
70	Deep Imbalance Regression Learning-Based Refractive Error Prediction using Retinal Fundus Images	Samantha Yew
71	Vertical Cup-to-Disc Ratio Estimation using Deep Learning: Does Models Trained on Conventional Fundus Images Generalize to Ultra-Widefield Setting?	Boon Peng Yap
72	The application of explainable artificial intelligence (XAI) in studying cognition: a scoping review	Shakran Mahmood
73	Neuroimaging data repositories and AI-driven healthcare – global aspirations vs. ethical considerations in Machine Learning models of neurological disease	Nicole Keong
74	Robust and Explainable White Blood Cell Recognition from Microscopic Images	Pang Winnie on behalf of Satoshi Tsutsui
75	Using Machine Learning to Gain Insight into Ocular Microvascular Complications in Diabetic Retinopathy	Thiara Sana Ahmed
76	Issues and Challenges in Building AI SaMD for Diagnosis and Monitoring of Vocal Diseases	Seung-Mo Cho
77	Integrated Platform for Resource-efficient Medical Image Annotation	Yang Yu
78	AI Powered Techniques For Landmark Identification in Human Upper Gastro-Intestinal System	Swapnal Varma
79	AI Digital Twin for Oncology	Tao Li
80	Evaluating the Performance of Resident and Consultant Radiologists in Comparison to an Artificial Intelligence System for Mammogram Assessment: A Multi-reader Multi-case Clinical Validation in Singapore	Hao Du
81	Explainable artificial intelligence (XAI) in Ophthalmology : A Review	Dylan Hong
82	RehabIt: Pushing the Frontier of AI-assisted Personalisation in the domain of Sustainable Rehabilitative Health	Siddarth Venkateswaran
83	Generation of patient image trajectory using longitudinal variational autoencoder	Ankit Kumar Das on behalf of Shaista Hussain
84	Continual Reinforcement Learning-based ASIC design of a Cardiac Pacemaker using AI-Generated Floorplans	Reena Monica P
85	Alpha Blending Based Image Generation for Effective Deep Learning of ECG Signals	Premanand S
86	Dr. EYE Chatbot: A Self-Instruct Tuned Large Language Model For Ophthalmology Questions	Rick Siow Mong Goh
87	Evaluating the use of Deep Learning for Retinal Fundus Image Quality Assessment	Johnathan Loh

88	Application of Machine Learning Algorithms for Heart Disease Prediction	Asegunloluwa Babalola
89	SkinDiseaseGLM: An Automated Interactive Chat-based Skin Disease Diagnosis System using Large Language Model	Xia Deneng on behalf of Owen N. N. Fernando
90	Evaluating the Performance of GPT-4 to Diagnose MIMIC-IV Patients	Peter Sarvari

Workshops

Workshop 1: AI for Ageless Aging

Summary: Projected to reach 1.5 billion people aged 65 or older by 2050, the rapidly aging population presents significant economic, social and political challenges. AI has emerged as a transformative force in aging research, providing innovative solutions for healthcare, disease management, and care for dementia patients. AI technologies can aid in assessing frailty risks, enable identification and intervention of age-related diseases, and offer customized and adaptable intervention plans. AI-based biomarkers provide comprehensive insights into biological processes, aiding in identifying key features and causal mechanisms. Despite ethical concerns, these technologies promise a new era of data-driven ageless aging. The "AI for Ageless Aging" workshop aims to bring together various stakeholders to explore AI's potential to promote active, healthy, independent, and dignified lifestyles among the elderly.

Invited Speakers:

1. Martin J. McKeown
2. Zhiqi Shen
3. Hongyu Zhang

Workshop 2: Aligning Large Language Models (LLMs) and Medicine: Dialogue between Computer Scientists and Physician Scientists

Summary: Designed to initiate a unique interdisciplinary conversation, this workshop is set to bridge the gap between the complexities of Large Language Models (LLMs) and the intricacies of the clinical process, via illuminating discussions between computer scientists and physician scientists who are seasoned in applying LLMs in real-world contexts. A collaborative exploration of the alignment between the mathematical prowess of LLMs and the nuanced clinical practice lies at the core of this workshop. The interaction aims to foster a deeper understanding of LLM application in real-world scenarios and to synthesize actionable insights on the aligned path forward in this emergent field. The workshop offers an excellent opportunity for those passionate about leveraging LLMs in their medical practice and research endeavours.

Invited Speakers:

1. Haibo Wang
2. Nicholas Anderson
3. Haitao Zheng
4. Kelvin Li
5. Liang Lin
6. Peter Sarvari

Workshop 3: Intensive Care Unit Smart Brain (ICU Brain) Workshop

Summary: Intensive Care Units (ICUs) cater to critically ill patients, serving millions of patients annually worldwide. The shortage of critical care professionals calls for the adopting of AI to improve efficiency and

effectiveness in ICUs. AI based systems can monitor patient vital signs, manage data, identify risk factors, and predict outcomes to improve clinical decision-making and resource utilization. Technologies such as the ICU Smart Brain employ AI for real-time monitoring and risk anticipation, also providing evidence-based treatment suggestions. Nonetheless, the ethical and interpretability issues surrounding AI usage need to be carefully addressed. A global workshop on ICU Brain will bring together ICU experts, AI researchers, and industry practitioners to discuss challenges and opportunities, thereby contributing to the advances in this field.

Invited Speakers:
1. Jane Wang
2. Chen Huanhuan
3. Cui Lizhen

Workshop 4: Harnessing the Power of Large Language Models in Clinical Medicine

Summary: Explore the world of large language models (LLMs) and learn more about harnessing their potential in this workshop. We'll guide you through practical applications in clinical medicine, from patient interaction to decision support. Learn how to effectively evaluate and implement AI models and equip yourself with the knowledge to leverage LLMs for better patient care. Join us to stay updated in this rapidly evolving field.

Presenters:
1. Joshua Tung Yi Min
2. Gerald Sng Gui Ren
3. Daniel Lim Yan Zheng

Tutorial 1: Explainable AI for diagnosis and prognosis in mental health

Mental illnesses have risen rapidly in the rankings from 13 in 1990 to 7 in 2017 as a leading cause of DALYS (Disability-adjusted Life Years). About 75% of mental illnesses have their onset before age 25 and continue to afflict suffering over a prolonged period, causing chronic disability. Mental illnesses rank the second leading cause of years lived with disability (YLD).

Accurate prediction of an individual’s risk of mental illness development demands advanced computational techniques for modelling multimodal sets of data including spatiotemporal brain data, cognitive assessments, genetic and molecular data, etc.

Traditional artificial intelligence and machine learning (AI/ML) models are clearly insufficient e.g. deep convolutional neural networks (CNNs), as the current state-of-the-art in machine learning, while successfully used in many applications, have limitations as it assumes a such representation of Information and cannot represent temporal effects. This has implications towards the establishment of causality, and therefore, limits its ability to generate knowledge from data. Moreover, the internal learning processes of CNNs are black-boxes, offering limited clues to their decision-making processes. Therefore, this is essential to propose and develop advanced AI and machine learning algorithms to improve both the model accuracy and explainability.

This workshop aims at gathering researchers in the field of AI, machine learning, bioinformatics and neuroinformatics to present state of the art knowledge in the development of interpretable and expandable computational models for diagnosis and prognosis of mental or neurological health outcomes.

Presenters:

1. Wilson Goh
2. Maryam Doborjeh
3. Zohreh Doborjeh
4. Edmund Lai
5. Jimmy Lee
6. Nikola Kasabov
7. Alex Sumich
8. Margaret Williams

Full Details Here:
iAIM Files

Tutorial 2: Advancing Healthcare with AI: Innovations in Life Science Tools and Applications in Genomic Analysis and Imaging

Summary: The tutorial explores the transformative impact of single-cell sequencing and AI in healthcare research. Single-cell sequencing has unravelled cellular heterogeneity, and in MGI, we have developed AI tools based on atlas data to accurately label these cell types, shedding light on disease mechanisms. In addition, we used deep learning tools to decode noncoding DNA, revealing regulatory mechanisms of diseases. Simultaneously, AI has revolutionized medical imaging, enabling precise diagnostics and personalized treatments. MGI presents a series of discussions on the future of healthcare, combining AI and advanced life science tools. This will be an excellent platform to exchange knowledge and explore the potential of AI-driven healthcare advancements.

Presenters:
1. Roy Tan
2. Yang Meng
3. Liu Jiang

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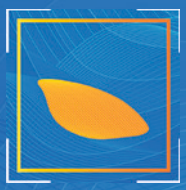

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