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Personal Data

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Present

Aug 2021 – Recent **Associate Professor** | School of Medicine, National Defense Medical Center
Jun 2019 – Recent **Chief Technology Officer** | AIoT center, Tri-Service General Hospital
Jul 2019 – Recent **Deputy Director** | Medical Technology Education Center, National Defense Medical Center
Jun 2020 – Recent **Deputy Secretary-general** | Aviation Medical Association R.O.C.
Sep 2021 – Recent **Guest Editor** | Journal of Personalized Medicine
Aug 2016 – Recent **Adjunct Assistant Professor** | School of Public Health, National Defense Medical Center

Experience

Aug 2018 – Jul 2021 **Assistant Professor** | Graduate institute of life sciences, National Defense Medical Center
Jul 2017 – Jul 2018 **Postdoctoral Research Fellow** | Department of Research and Development, National Defense Medical Center

Education

Sep 2013 – Apr 2016 Doctor of Philosophy in Life Science, **National Defense Medical Center**, Taiwan

Selected courses

Sep 2021 – Recent **Machine Learning and Algorithm (2 credits)** | for students with basic statistical concepts
Sep 2018 – Recent **Introduction to R language (2 credits)** | for students without programming experience
Jun 2019 – Recent **Deep Learning-Theory and Practice (3 credits)** | for students with programming skill
Jun 2022 – Recent **Medical Artificial Intelligence Implementation (2 credits)** | for deep learning developers

Selected Important Project Experience

Nov 2017 - Recent	Artificial intelligence for electrocardiogram analysis <i>Deep Learning, Decision support, Computer Aided Diagnosis, Wearable Device</i> ECG12Net and its specific training process have been developed for ECG recognition. More than 50 clinical diagnoses supporting via ECG12Net which is better than cardiologists. The model has been deployed in hospital, and further application in out-of-hospital is conducting. Morphologies not in textbook has been identified and used to teach physicians.
Jul 2018 - Recent	Deep learning algorithm design for medical data <i>Deep Learning, Statistics, Mathematics, Epidemiology</i> Unsupervised learning aided deep neural network training to solve the rare data problem. Matched deep learning training strategy for learning causality. To design special prediction functions and loss functions to solve the problem of missing data. Multi-level statistical models enhanced deep learning for personalized artificial intelligence.
Sep 2016 - Recent	Smart hospital development <i>Deep Learning, Computer Vision, Natural Language Processing</i> The self-developed annotation system is applied to service more than 30 researches. Automatic training process is used in X-ray, CT, MRI, endoscope, pathology, etc. Initial diagnosis and calculation for reducing physician loading. The natural language processing system is applied to simplify routine works.

Appendix 1 Introduction about my works

1. Artificial intelligence for electrocardiogram analysis (Nov 2017 - Recent)

Cardiovascular disease (CVD) is an important public health issue. Screening and diagnosis play key role to reduce the burden of disease. The electrocardiogram (ECG) is a cheap and simple examination. With the development of deep learning models (DLMs), the artificial intelligence (AI) enabled ECG system has been able to accurately assist in the screening of chronic CVDs and the detection of acute CVD events, which provided an opportunity to facilitate the healthcare system, including hospital, community, and home. Our AI-enabled ECG interpretation system combines the large-scale annotation database and the innovative deep learning algorithm, which can accurately assist in the diagnosis of more than 50 diseases using only one simple ECG. This system will be active by ECG upload and conduct real-time analysis (**Fig 1**), which provides physicians to identify severe, asymptotic, and unaware cardiovascular diseases at the first time. It can also be widely used in remote communities to conduct cheap and simple chronic cardiovascular disease examinations and reduce the related disease burden through early diagnosis and treatment. Currently, we also focus on the application of these technologies in out-of-hospital condition to wearable device (**Fig 2**).

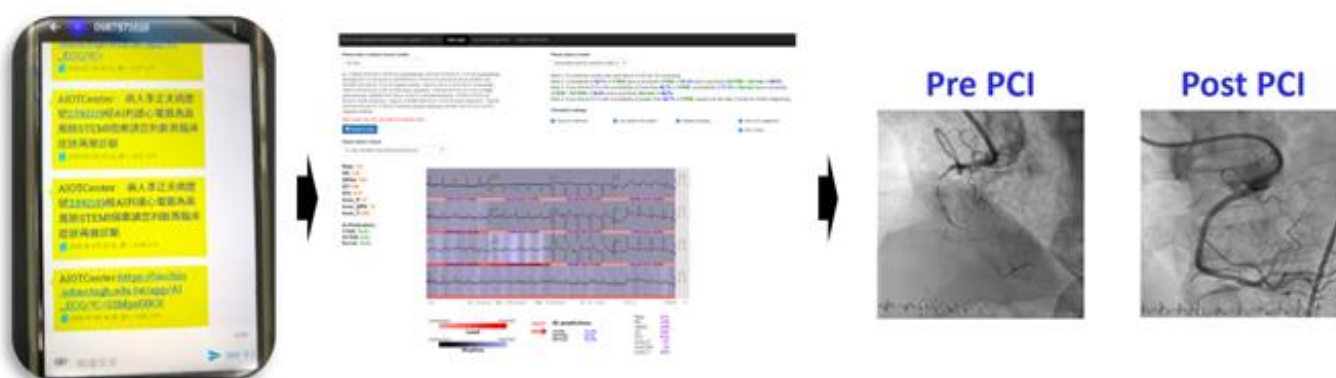


Fig 1 | ECG based fatal diseases detection system in hospital. All ECGs are covered by our AI system, and the AI report will be generated within 10 seconds. SMS will actively send the message to physicians when the patient suffered acute fatal diseases. Physicians can use the URL for reviewing the details of AI report, and subsequently starts the treatment. This was a STEMI case which detected by our AI system and alerted the on duty cardiologist for earlier PCI.



Fig 2 | "national best six" innovative star



Fig 3 | Interview on documentary of Discovery channel.



Fig 4 | SNQ golden award



Fig 5 | NHQA golden award



Fig 6 | FutureTech Award 2022

The successful of our AI-ECG was based on extensive database and novelty algorithms. Our team has the world number two ECG database with the most comprehensive patient characteristics and diagnoses. Besides, we have innovative deep learning algorithms to enhance model performance, so our AI-enabled ECG interpretation system can assist extensive disease diagnoses with high accuracy. Our system has been deployed in many fields to change local clinical process, and the relevant results have also been recognized by several domestic awards (**Figs 2-6**) and published about 20 clinical application or algorithm studies in international journals.

Our AI-ECG interpretation system hopes to monitor the user's physiological condition in a non-invasive way through ECG examination. It provides simple disease screening tools and assists clinicians in making real-time decision-making in places where medical resources are lacking. The system can effectively and quickly diagnose acute cardiopulmonary diseases and simply screen potential diseases. In addition to being used in hospitals, it can also be used in ambulances, telemedicine and wearable devices (**Fig 7**) in the future to reduce the possibility of sudden death. Therefore, it is of great help in improving the health of the Taiwanese people and even all mankind.

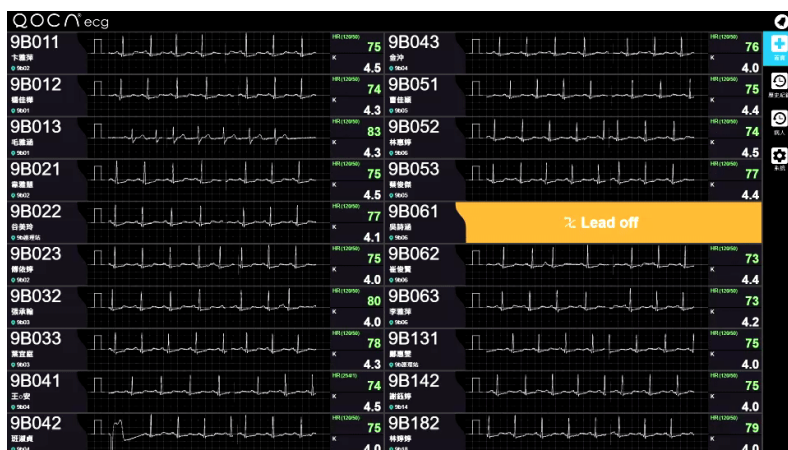


Fig 7 | NDMC and Quanta for wearable device.

2. Deep learning algorithm design for medical data (Jul 2018 - Recent)

With the third artificial intelligence (AI) revolution started from 2012, the deep learning model (DLM), a data-driven algorithm, can learn the useful features rather than manually when the large annotated dataset available. This provides an excellent opportunity to improve healthcare, but there are some limitations of medical data which are needed to develop suitable algorithms for medical AI system.

1. Unsupervised learning aided deep neural network training to solve the rare data problem.

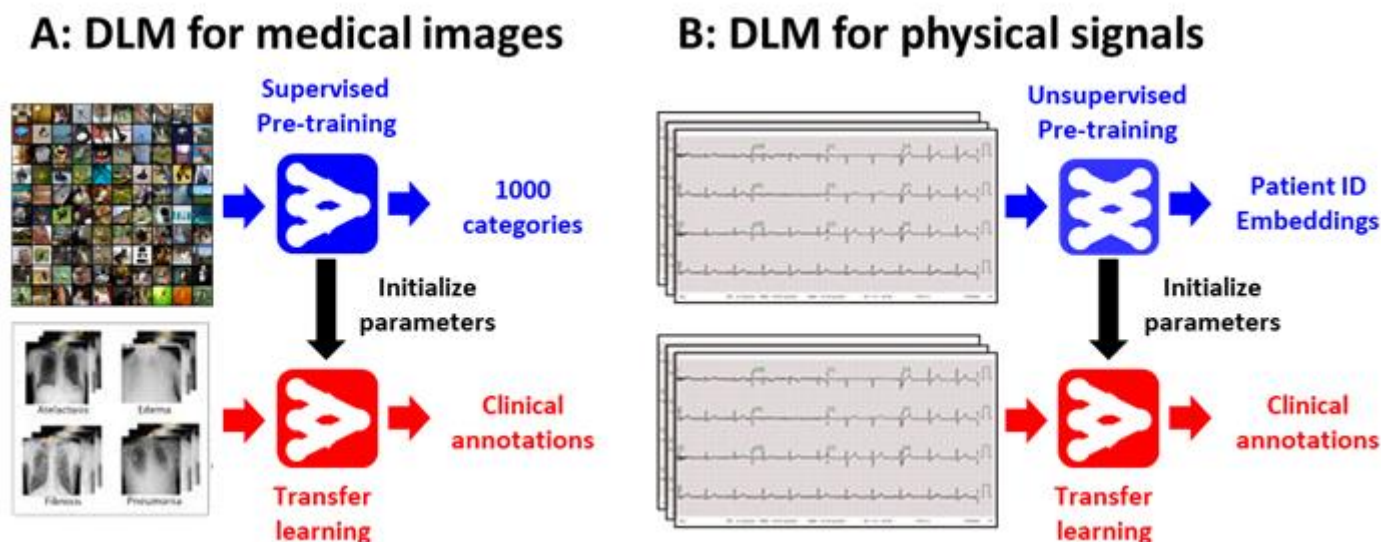


Fig 8 | DLM training strategy for ECG data. To apply the DLM pre-trained by ImageNet for improving the accuracy is common in medical image analysis. We revolutionarily developed an unsupervised training strategy enhancing the feature extraction ability of DLM in ECGs through patient ID learning. This will improve the model accuracy especially in rare disease detections. Because the medical data involves manual operations and expensive instruments, the amount of annotated data is scarce compared to other industries. Moreover, the incidence and prevalence of fatal diseases are mostly lower compared to non-fatal diseases. To conquer the insufficient data limitation is necessary. Transfer learning is a common solution in deep learning training that can effectively reduce the required sample size. Our main work is to use a large amount of unlabeled data for unsupervised algorithms, and apply them to supervised learning (**Fig 8**).

2. Matched deep learning training strategy for learning causality.

Traditional medical researches focus on causality exploration, but the medical AI studies often ignored this issue. Since the powerful feature extraction ability from DLM, current AI often learns the spurious correlations to construct the prediction which reduce the accuracy in future external validation. We designed the matched training strategy to maximize the notable features learning by DLM, which significantly improves the accuracy in many tasks (**Fig 9**).

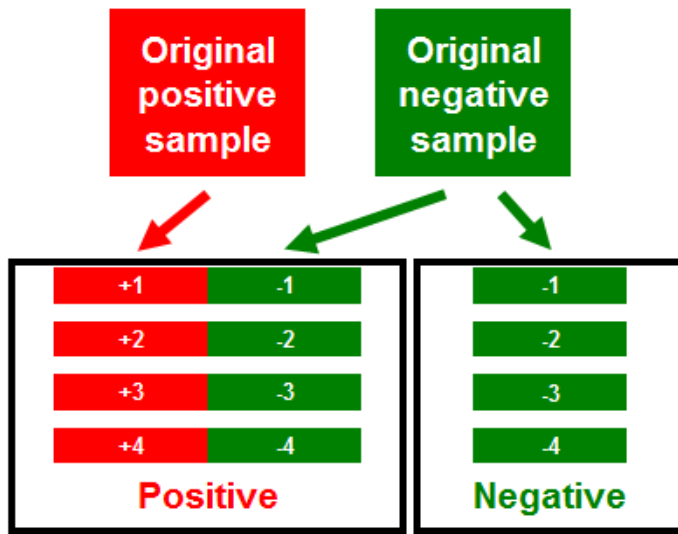
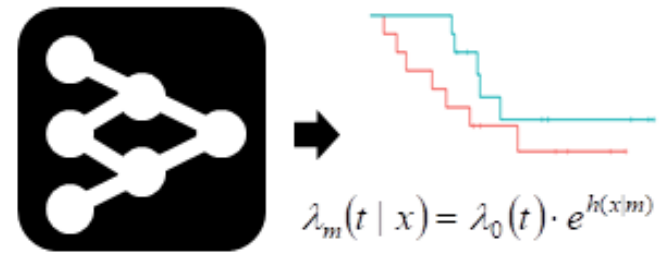


Fig 9 | Hybrid sampling method. Since the existing data structure, such as pregnant cases usually without cancer, the DLM will use the pregnant terms as the negative predictors for identifying cancer discharge notes. This hybrid sampling method, a type of matching strategy, avoids DLM to learn spurious correlations for improving the external accuracy.

3. To design special prediction functions and loss functions to solve the problem of missing data.

The data source is usually based on observational design in the medical field, so DLM training is often limited by unusual data format. We have designed few DLM architecture with its specific loss function, such as survival analysis and restricted continuous output (**Fig 10**).



$$loss(\beta) = -\frac{1}{N} \sum_{E=1} \sum_{k: E_k=1} (h(x|k) - \log(\sum_{j \in R(t_k)} e^{h(x|j)}))$$

Fig 10 | Deep neural network for survival analysis. The typical follow up cohort will suffer from right-censored data problem, and all the tests may be not performed every time. The survival analysis in the statistics gives us a good inspiration. By cutting the data into fine-grained time periods, we effectively use the information of all samples. We apply the masking idea to our sample for deep learning training in conventional medical data. It will solve the gap to directly apply traditional deep learning technology in the medical field.

Previous personal ECGs

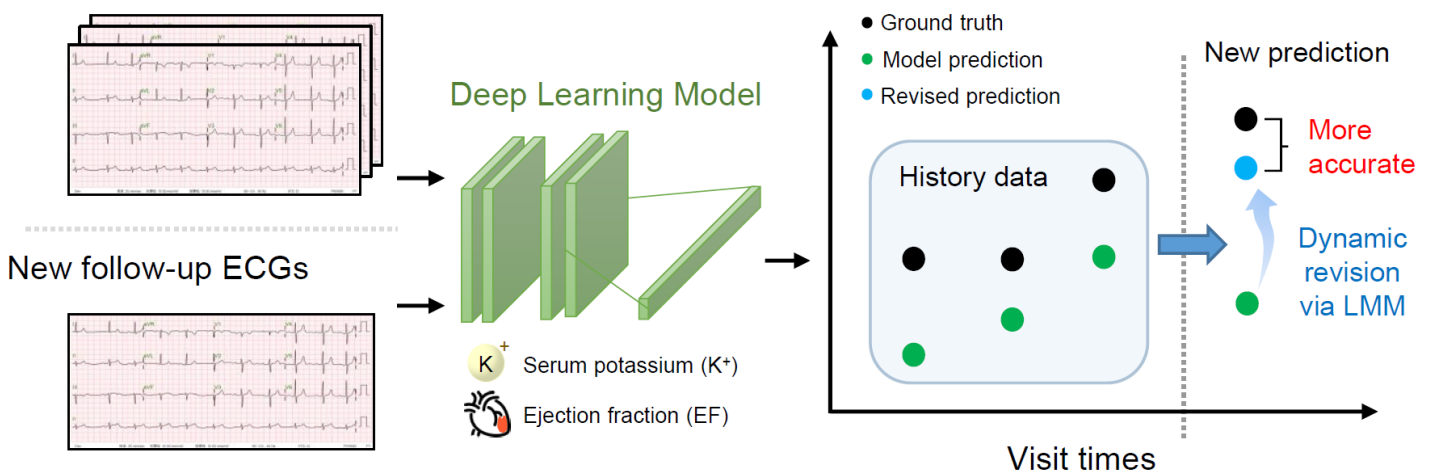


Fig 11 | The advantage of personal AI predictions. This is an example to use ECG based K^+ for guiding K^+ supplement treatment in hypokalemia patients. The blue line is the actual K^+ based on laboratory test, and the black dashed line is the predicted K^+ based on DLM. DLM continuously overestimates the K^+ concentration due to unknown reasons. The personal model may use the real time validation to revise the estimations. The STEMI detection model also can use this personal revision to exclude the impact of MI history.

4. Combination of multi-level statistical models and deep learning to create personalized artificial intelligence.

The treatment response for each individual is different, so it is impossible to use one artificial intelligence model for individually accurate prediction. Establishing a personalized artificial intelligence model is crucial, however, it is impossible to train personalized artificial intelligence model using individual data. The multi-level data analysis in statistics shows how to use the distribution assumptions to construct personalized predictions. Although only one record can be used to construct a personalized prediction. Our algorithm can dynamically revise the predictions (**Fig 11**).

3. Smart hospital development (Sep 2016 - Recent)

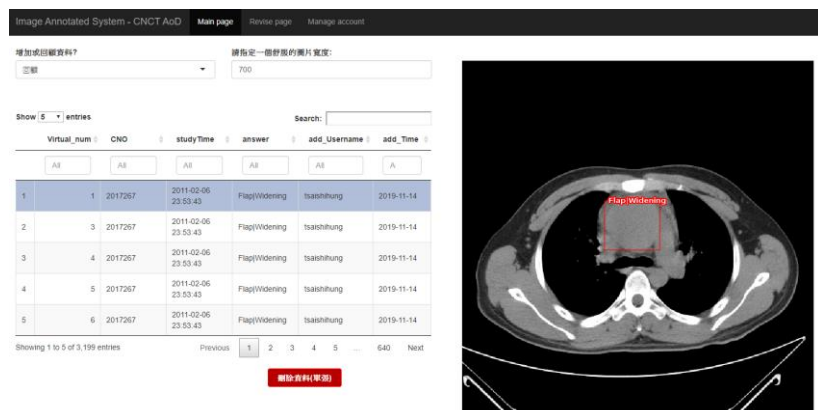


Fig 12 | The online annotation system.



Fig 13 | The bone marrow smears analysis system.

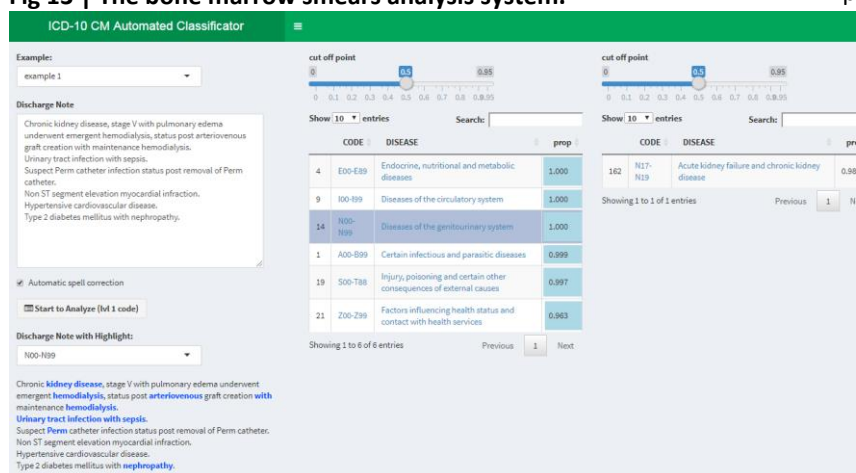


Fig 15 | The template application for disease coding of discharge note. Our team has developed an automatic disease classification approach from free-text clinical narratives by word embedding combining convolutional neural network, and its performance is 30% better than the best of traditional method (natural language processing plus random forest). Moreover, we have developed a projection word2vec model for maintaining the vocabulary diversity from open internet databases without jeopardizing the medical terminology understanding of EMRs. This is useful to identify COVID-19 before hospitals comfort any cases.

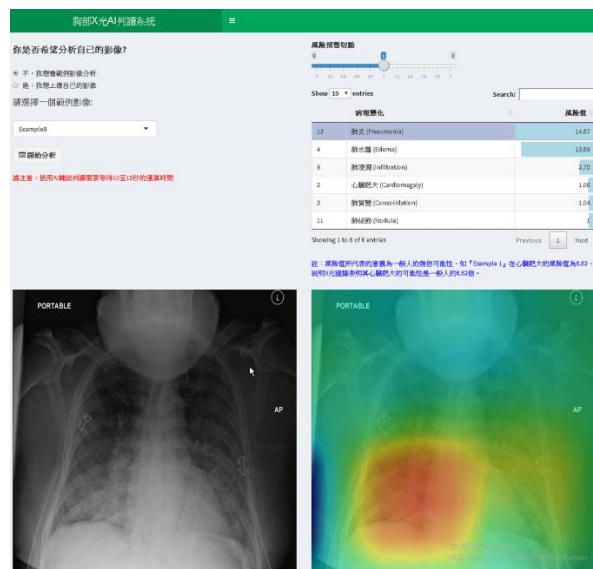


Fig 14 | The chest X-ray diagnosis system. Chest X-ray is a common diagnostic tool has been used for decades. Many diagnostic gold standards were based on findings from X-ray image. Here we have developed a deep learning model for chest X-ray recognition, and the experiment demostartes the performance is greater than CheXnet, a radiologist-level pneumonia detection algorithm developed by Stanford ML Group. Department of Radiology at Tri service general hospital already apply it in clinical practice.



Fig 16 | AIoT center won the national medical quality award. The AI system developed by our AIoT center shows the application situations in Tri-service general hospital which saves many lives from acute cardiac diseases. Vice superintendent was the awarded representative of our team.

More than 90% diagnosis depends on free-text descriptions or medical images. However, the medical image recognition is laborious and costly. An efficient computer-aided diagnosis system may decrease the extent of labor-intensive nature of health care system. We have developed multiple annotation systems to service more than 30 researches ([Fig 12](#)). Based on these vary data, we have developed an automatic training process for training DLMs. Many services are deployed in our hospital to reduce physician loading ([Figs 13 & 14](#)). Moreover, an automatic discharge note classification system based on natural language processing of DLM helps hospital to simplify the routine process ([Fig 15](#)). This work won an award and lead to the first smart hospital in nationwide ([Fig 16](#)).

4. Technology enhanced learning (Jan 2019 - Recent)

Although medical image interpretation plays a critical role in biomedicine, it remains a great challenge for medical students in real clinical practice. Technology enhanced learning provides deliberate learning for medical students to improve learning efficiency. We have developed a web based ECG ([Fig 17](#)) and image ([Fig 18](#)) exercise system, which provides an opportunity for deliberate learning. Faculties can also review students’ answers through these systems ([Fig 19](#)).



Fig 18 | The web based image interpretation exercise system.



Fig 17 | The web based ECG exercise system.



Fig 19 | Summary table for students’ answer.

5. Statistical method development (PhD thesis: Jul 2013 - Sep 2016)

DNA information decoding is an important part of precision medicine. Conventional genome-wide association studies (GWAS) have successfully identified many important genetic variants in a few of complex human traits. However, there is still a large heritability gap in most human phenotypes. The so-called ‘missing heritability’ might be attributed to lack of technologies detecting gene–gene and gene–environment interactions. An individual study usually did not have sufficient sample size, and meta-analysis is a common method for increasing statistical power. However, sufficient detailed individual data is difficult to obtain. Our team provides two innovative methods to detect gene–gene and gene–environment interactions using summary data, respectively ([Fig 20](#)).

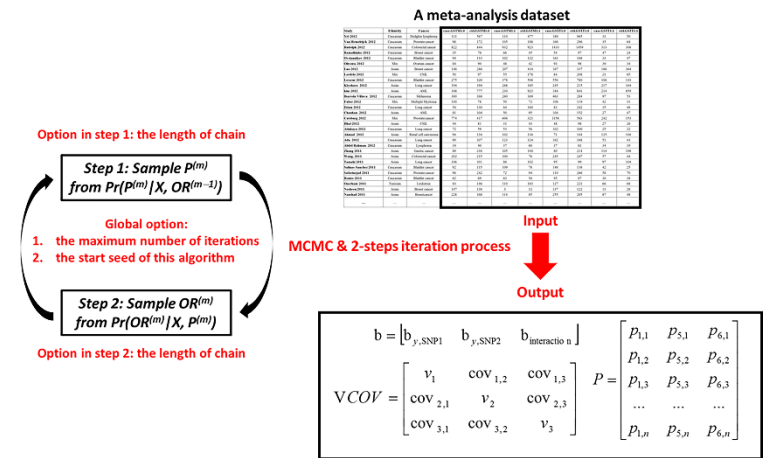


Fig 20 | A typical analysis pipeline of ETMA. This figure summarized the pipeline of ETMA. The main input is a meta-analysis dataset, which including the number of wild/mutation type of SNP1/SNP2 in case/control group. The output includes the odds ratios of each SNP and their interaction. We provide an R-package "etma" to implement this statistical analysis.

Appendix 2 Full academic profile

Grants:

1. A comprehensive artificial intelligence system for heart valve disease from screening to postoperative care (1/3).
Cheng Hsin General Hospital
Jan, 2023 - Dec, 2023, NT\$ 800,000, CHNDMC-112-05
PI: Lin C; Co-PI: Lee YT
2. Algorithm study of Personalized ECG Artificial Intelligence Model on Wearable Devices in national military.
Medical Affairs Bureau
Jan, 2023 - Dec, 2023, NT\$ 630,000, MND-MAB-C13-112050
PI: Lin C
3. The development of artificial intelligence markers and disease risk assessment model via the multi-source medical data platform.
Ministry of Science and Technology, Taiwan
May, 2022 - Apr, 2023, NT\$ 9,000,000, MOST111-2321-B-016-003
PI: Wang CH; Co-PI: Lin C et al.
4. Electrocardiogram-based artificial intelligence: an innovation system for diabetes management.
Cheng Hsin General Hospital
Jan, 2022 - Dec, 2022, NT\$ 500,000, CHNDMC-111-07
PI: Lin C; Co-PI: Lee YT
5. The Development of artificial intelligence in Tri-Service General Hospital.
Tri-Service General Hospital
Jan, 2022 - Dec, 2022, NT\$ 2,250,000, TSGH-B-111020
PI: Ho CL; Co-PI: Lin C et al.
6. The Application of Artificial Intelligence-Assisted Tools to Management of Diabetic Care.
Tri-Service General Hospital
Jan, 2022 - Dec, 2022, NT\$ 477,000, TSGH-E-111217
PI: Fang WH; Co-PI: Lin C
7. Artificial intelligence analysis of response of olfactory mice model.
Medical Affairs Bureau
Jan, 2022 - Dec, 2022, NT\$ 480,000, MND-MAB-D-111045
PI: Lin C; Co-PI: Chen CF
8. Epidemiology and deep learning enhanced electrocardiogram innovative health care service system-Screening and progression prediction for multiple chronic diseases and abnormal cardiac states
Ministry of Science and Technology, Taiwan
Aug, 2021 - Jul, 2024, NT\$ 4,050,000, MOST110-2314-B-016-010-MY3
PI: Lin C; Co-PI: Lin CS, Fang WH
9. Development and Validation of Acute Cardiac Sudden Death Monitoring and Real-time Detection System.
National Science and Technology Development Fund Management Association, Taiwan
Jun, 2021 - May, 2022, NT\$ 1,107,000, MOST110-3111-Y-016-005
PI: Lin C
10. The development of artificial intelligence markers and disease risk assessment model via the multi-source medical data platform.
Tri-Service General Hospital
May, 2021 - Apr, 2022, NT\$ 7,000,000, MOST110-2321-B-016-002
PI: Wang CH; Co-PI: Lin C et al.
11. The Development of artificial intelligence in Tri-Service General Hospital: The application of personal predict model in medical artificial intelligence.
Tri-Service General Hospital
Jan, 2021 - Dec, 2021, NT\$ 2,500,000, TSGH-B-110009
PI: Wang CH; Co-PI: Lin C et al.
12. The association between cardiac age and cardiovascular events in health examination cohort.
Cheng Hsin General Hospital
Jan, 2021 - Dec, 2021, NT\$ 365,000, CHNDMC-110-15
PI: Lin C; Co-PI: Lee YT
13. An active biological weapon detector based on odor sensing mice combined with artificial intelligence(1/3)
Medical Affairs Bureau
Jan, 2021 - Dec, 2021, NT\$ 475,000, MND-MAB-110-113
PI: Lin C; Co-PI: Chen CF
14. The Application of Projection Word Embeddings on the Admission Note Writing Assistant System.
Ministry of Science and Technology, Taiwan
Aug, 2020 - Jul, 2021, NT\$ 1,120,000, MOST109-2314-B-016-021
PI: Fang WH; Co-PI: Lin C
15. Apply unsupervised learning to enhance artificial intelligence of electrocardiogram for detecting potential cardiopulmonary injuries.

- Ministry of Science and Technology, Taiwan**
 Aug, 2020 - Jul, 2021, **NT\$ 1,000,000**, **MOST109-2314-B-016-026**
 PI: **Lin C**; Co-PI: Lin CS, Fang WH
16. The role of dopamine neurotransmission in Artificial Intelligence treatment of Parkinson's disease by using MitoPark mice for signal decoding
Ministry of Science and Technology, Taiwan
 Aug, 2020 - Jul, 2022, **NT\$ 2,247,400**, **MOST109-2314-B-016-019-MY2**
 PI: Chen YH; Co-PI: **Lin C**, Huang YK
17. Artificial Intelligence based Discharge Note Classification Model Efficacy study.
National Science and Technology Development Fund Management Association, Taiwan
 May, 2020 - Apr, 2021, **NT\$ 1,175,000**, **MOST109-3111-Y-016-002**
 PI: **Lin C**
18. The Development of artificial intelligence in Tri-Service General Hospital.
Tri-Service General Hospital
 Jan, 2020 - Dec, 2020, **NT\$ 2,500,000**, **TSGH-B-109011**
 PI: Tsai CS; Co-PI: **Lin C** et al.
19. The effect of projection word embeddings on performance of automatic discharge note coding system.
Cheng Hsin General Hospital
 Jan, 2020 - Dec, 2020, **NT\$ 500,000**, **CHNDMC-109-19**
 PI: **Lin C**; Co-PI: Lee YT
20. The effect of word embeddings on performance of automatic discharge note coding system.
Taoyuan Armed Forces General Hospital
 Jan, 2020 - Dec, 2020, **NT\$ 350,000**, **TYAFGH-D-109043**
 PI: **Lin C**; Co-PI: Wu FR
21. Establishment and Application of Big Image Database in Taipei Medical University (3/3).
Ministry of Science and Technology, Taiwan
 Dec, 2019 - Nov, 2020, **NT\$ 29,000,000**, **MOST108-3011-F-038-001**
 PI: Chen CY; Co-PI: **Lin C** et al.
22. The Core Algorithm Research in Real Time Electro Cardiac Signals Analysis Innovation Ecosystem.
Ministry of Science and Technology, Taiwan
 Aug, 2019 - Jul, 2020, **NT\$ 1,000,000**, **MOST108-2314-B-016-001**
 PI: **Lin C**; Co-PI: Lin CS, Fang WH
23. Artificial Intelligence based Discharge Note Classification Model Efficacy study.
National Science and Technology Development Fund Management Association, Taiwan
 May, 2019 - Apr, 2020, **NT\$ 1,098,000**, **MOST108-3111-Y-016-009**
 PI: **Lin C**
24. Establishment and Application of Big Image Database in Taipei Medical University (2/3).
Ministry of Science and Technology, Taiwan
 Dec, 2018 - Nov, 2019, **NT\$ 28,655,000**, **MOST107-2634-F-038-001**
 PI: Chen CY; Co-PI: **Lin C** et al.

Journal articles:

*: co-responders; #: Authors contributed equally

2023

1. Lou YS, Lin CS, Fang WH, Lee CC, **Lin C*** (2023, Apr) Extensive deep learning model to enhance electrocardiogram application via latent cardiovascular feature extraction from identity identification. *Computer Methods and Programs in Biomedicine*, 231:107359. [2021 Impact Factor: 7.027, 12/110(10.4%) in COMPUTER SCIENCE, THEORY & METHODS].

2022

2. Lee CH, Liu WT, Lou YS, Lin CS, Fang WH, Lee CC, Ho CL, Wang CH, **Lin C*** (2022, Dec) Artificial intelligence-enabled electrocardiogram screens low left ventricular ejection fraction with a degree of confidence. *Digital Health*, 8:20552076221143249. [2021 Impact Factor: 4.687, 12/88(13.1%) in HEALTH POLICY & SERVICES].
3. Lou YS, Lin CS, Fang WH, Lee CC, Wang CH, **Lin C*** (2022, Nov) Development and validation of dynamic deep learning algorithm using electrocardiogram to predict dyskalemias in patients with multiple visits. *European Heart Journal - Digital Health*, ztac072. [Not included in JCR].
4. **Lin C**, Chen CC, Chau T, Lin CS, Tsai SH, Lee DJ, Lee CC, Shang HS, Lin SH* (2022, Nov) Artificial intelligence-enabled electrocardiography identifies severe dyscalcemias and has prognostic value. *Clinica Chimica Acta*, 536:126-134. [2021 Impact Factor: 6.314, 5/29(15.5%) in MEDICAL LABORATORY TECHNOLOGY].
5. Cheng CC, Lin CS, Yin WH, **Lin C**, Liu IF, Lee YF, Liu WT, Fu HN, Huang CL, Tsao TP* (2022, Sep) The safety and efficacy of the Mo.Ma system device for carotid artery stenting: A single-center experience from Taiwan. *Frontiers in Cardiovascular Medicine*, 9:926513. [2021 Impact Factor: 5.846, 43/143(29.7%) in CARDIAC & CARDIOVASCULAR SYSTEMS].

6. Lee CC, Lin CS, Tsai CS, Tsao TP, Cheng CC, Liou JT, Lin WS, Lee CC, Chen JT, **Lin C*** (2022, Aug) A deep learning-based system capable of detecting pneumothorax via electrocardiogram. *European Journal of Trauma and Emergency Surgery*, 48(4):3317-3326. [2021 Impact Factor: 2.374, 18/32(54.7%) in EMERGENCY MEDICINE].
7. Liu YL, Lin CS, Cheng CC, **Lin C*** (2022, Jul) A Deep Learning Algorithm for Detecting Acute Pericarditis by Electrocardiogram. *Journal of Personalized Medicine*, 12(7):1150. [2021 Impact Factor: 3.508, 41/109(37.2%) in HEALTH CARE SCIENCES & SERVICES].
8. Hsiang CW, **Lin C**, Liu WC, Lin CS, Chang WC, Hsu HH, Huang GS, Lou YS, Lee CC, Wang CH, Fang WH* (2022, Jun) Detection of left ventricular systolic dysfunction using an artificial intelligence-enabled chest X-ray. *Canadian Journal of Cardiology*, 38(6):763-773. [2021 Impact Factor: 6.614, 37/143(25.5%) in CARDIAC & CARDIOVASCULAR SYSTEMS].
9. Lee YT, Lin CS, Fang WH, Lee CC, Ho CL, Wang CH, Tsai DJ*, **Lin C*** (2022, Jun) Artificial intelligence-enabled electrocardiography detects hypoalbuminemia and identifies the mechanism of hepatorenal and cardiovascular events. *Frontiers in Cardiovascular Medicine*, 9:895201. [2021 Impact Factor: 5.846, 43/143(29.7%) in CARDIAC & CARDIOVASCULAR SYSTEMS].
10. Chen YC, Hsing SC, Chao YP, Cheng YW, Lin CS, **Lin C**, Fang WH* (2022, May) Clinical Relevance of the LVEDD and LVESD Trajectories in HF Patients With LVEF < 35%. *Frontiers in Medicine*, 9:846361. [2021 Impact Factor: 5.058, 52/171(29.9%) in MEDICINE, GENERAL & INTERNAL].
11. Chen HY, Lin CS, Fang WH, Lee CC, CL Ho, CH Wang, **Lin C*** (2022, Apr) Artificial intelligence-enabled electrocardiogram predicted left ventricle diameter as an independent risk factor of long-term cardiovascular outcome in patients with normal ejection fraction. *Frontiers in Medicine*, 9:870523. [2021 Impact Factor: 5.058, 52/171(29.9%) in MEDICINE, GENERAL & INTERNAL].
12. Chen HY, Lin CS, Fang WH, Lou YS, Cheng CC, Lee CC, **Lin C*** (2022, Mar) Artificial Intelligence-Enabled Electrocardiography Predicts Left Ventricular Dysfunction and Future Cardiovascular Outcomes: A Retrospective Analysis. *Journal of Personalized Medicine*, 12(3):455. [2021 Impact Factor: 3.508, 41/109(37.2%) in HEALTH CARE SCIENCES & SERVICES].
13. Lou YS, Lin CS, Fang WH, Lee CC, Ho CL, Wang CH, **Lin C*** (2022, Feb) Artificial intelligence-enabled electrocardiogram estimates left atrium enlargement as a predictor of future cardiovascular disease. *Journal of Personalized Medicine*, 12(2):315. [2021 Impact Factor: 3.508, 41/109(37.2%) in HEALTH CARE SCIENCES & SERVICES].
14. Chang CH, Lin CS, Luo YS, Lee YT, **Lin C*** (2022, Feb) Electrocardiogram-based heart age estimation by a deep learning model provides more information on the incidence of cardiovascular disorders. *Frontiers in Cardiovascular Medicine*, 9:754909. [2021 Impact Factor: 5.846, 43/143(29.7%) in CARDIAC & CARDIOVASCULAR SYSTEMS].
15. Liu WT, Lin CS, Tsao TP, Lee CC, Cheng CC, Chen JT, Tsai CS, Lin WS, **Lin C*** (2022, Feb) A Deep-Learning Algorithm-Enhanced System Integrating Electrocardiograms and Chest X-rays for Diagnosing Aortic Dissection. *Canadian Journal of Cardiology*, 38(2):160-168. [2021 Impact Factor: 6.614, 37/143(25.5%) in CARDIAC & CARDIOVASCULAR SYSTEMS].
16. **Lin C**, Chau T, Lin CS, Shang HS, Fang WH, Lee DJ, Lee CC, Tsai SH, Wang CC, Lin SH* (2022, Jan) Point-of-care artificial intelligence-enabled ECG for dyskalemia: a retrospective cohort analysis for accuracy and outcome prediction. *npj Digital Medicine*, 5(1):8. [2021 Impact Factor: 15.357, 1/109(0.5%) in HEALTH CARE SCIENCES & SERVICES].

2021

17. Liu WC, **Lin C**, Lin CS, Tsai MC, Chen SJ, Tsai SH, Lin WS, Lee CC, Tsao TP, Cheng CC* (2021, Nov) An Artificial Intelligence-Based Alarm Strategy Facilitates Management of Acute Myocardial Infarction. *Journal of Personalized Medicine*, 11(11):1149. [2021 Impact Factor: 3.508, 41/109(37.2%) in HEALTH CARE SCIENCES & SERVICES].
18. Dayan I, Roth HR, Zhong A, Harouni A, Gentili A, Abidin AZ, Liu A, Costa AB, Wood BJ, Tsai CS, Wang CH, Hsu CN, Lee CK, Ruan P, Xu D, Wu D, Huang E, Kitamura FC, Lacey G, de Antônio Corradi GC, Nino G, Shin HH, Obinata H, Ren H, Crane JC, Tetreault J, Guan J, Garrett JW, Kaggie JD, Park JG, Dreyer K, Juluru K, Kersten K, Rockenbach MABC, Linguraru MG, Haider MA, AbdelMaseeh M, Rieke N, Damasceno PF, e Silva PMC, Wang P, Xu S, Kawano S, Sriswasdi S, Park SY, Grist TM, Buch V, Jantarabenjakul W, Wang W, Tak WY, Li X, Lin X, Kwon YJ, Quraini A, Feng A, Priest AN, Turkbey B, Glicksberg B, Bizzo B, Kim BS, TorDíez C, Lee CC, Hsu CJ, **Lin C**, Lai CL, Hess CP, Compas C, Bhatia D, Oermann EK, Leibovitz E, Sasaki H, Mori H, Yang I, Sohn JH, Murthy KNK, Fu LC, de Mendonça MRF, Fralick M, Kang MK, Adil M, Gangai N, Vateekul P, Elnajjar P, Hickman S, Majumdar S, McLeod SL, Reed S, Gräf S, Harmon S, Kodama T, Puthanakit T, Mazzulli T, de Lavor VL, Rakvongthai Y, Lee YR, Wen Y, Gilbert FJ, Flores MG*, Li Q (2021, Oct) Federated learning for predicting clinical outcomes in patients with COVID-19. *Nature Medicine*, 27(10):1735-1743. [2021 Impact Factor: 87.241, 1/296(0.2%) in BIOCHEMISTRY & MOLECULAR BIOLOGY].
19. Liu WC, Lin CS, Tsai CS, Tsao TP, Cheng CC, Liou JT, Lin WS, Cheng SM, Lou YS, Lee CC, **Lin C*** (2021, Oct) A deep-learning algorithm for detecting acute myocardial infarction. *EuroIntervention*, 17(9):765-773. [2021 Impact Factor: 7.728, 26/143(17.8%) in CARDIAC & CARDIOVASCULAR SYSTEMS].
20. Tsai PH, Yang HC, **Lin C**, Sung CC, Chu P, Hsu YJ* (2021, Oct) Association of Serum Phosphate With Low Handgrip Strength in Patients With Advanced Chronic Kidney Disease. *Nutrients*, 13(10):3605. [2021 Impact Factor: 6.706, 15/90(16.1%) in NUTRITION & DIETETICS].
21. Chou HJ#, Chen PH#, Ou-Yang LJ, **Lin C**, Tang SE*, Lee CH* (2021, Oct) Methods of Weaning From Mechanical Ventilation in Adult: A Network Meta-Analysis. *Frontiers in Medicine*, 8:1789. [2021 Impact Factor: 5.058, 52/171(29.9%) in MEDICINE, GENERAL & INTERNAL].

22. **Lin C**, Lin CS, Lee DJ, Lee CC, Chen SJ, Tsai SH, Kuo FC, Chau T, Lin SH* (2021, Sep) Artificial Intelligence–Assisted Electrocardiography for Early Diagnosis of Thyrotoxic Periodic Paralysis. *Journal of the Endocrine Society*, 5(9), bvab120. [Not included in JCR].
23. **Lin C**#, Lee YT#, Wu FJ#, Lin SA, Hsu CJ, Lee CC, Tsai DJ*, Fang WH* (2021, Sep) The Application of Projection Word Embeddings on Medical Records Scoring System. *Healthcare*, 9(10):1298. [2021 Impact Factor: 3.160, 35/88(39.2%) in HEALTH POLICY & SERVICES].
24. Lee CC, Hsing SC, Lin YT, **Lin C**, Chen JT, Chen YH, Fang WH* (2021, Sep) The Importance of Close Follow-Up in Patients with Early-Grade Diabetic Retinopathy: A Taiwan Population-Based Study Grading via Deep Learning Model. *International Journal of Environmental Research and Public Health*, 18(18):9768. [2021 Impact Factor: 4.614, 71/210(33.6%) in PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH].
25. Hsing SC, **Lin C**, Chen JT, Chen YH, Fang WH* (2021, Aug) Glycemic Gap as a Useful Surrogate Marker for Glucose Variability and Progression of Diabetic Retinopathy. *Journal of Personalized Medicine*, 11(8):799. [2021 Impact Factor: 3.508, 41/109(37.2%) in HEALTH CARE SCIENCES & SERVICES].
26. Lin CS, Lee YT, Fang WH, Lou YS, Kuo FC, Lee CC, **Lin C*** (2021, Jul) Deep learning algorithm for management of diabetes mellitus via electrocardiogram-based glycated hemoglobin (ECG-HbA1c): a retrospective cohort study. *Journal of Personalized Medicine*, 11(8):725. [2021 Impact Factor: 3.508, 41/109(37.2%) in HEALTH CARE SCIENCES & SERVICES].
27. Chiang YC, Chang YP, Lin SC, **Lin C**, Hsu PH, Hsu YJ, Wu TJ* (2021, Jul) Effects of Individualized Dietary Phosphate Control Program With a Smartphone Application in Hemodialysis Patients in Taiwan. *Biological Research for Nursing*, 23(3):375-381. [2021 Impact Factor: 2.318, 49/125(38.8%) in NURSING].
28. Chang DW, Lin CS, Tsao TP, Lee CC, Chen JT, Tsai CS, Lin WS, **Lin C*** (2021, Apr) Detecting Digoxin Toxicity by Artificial Intelligence-Assisted Electrocardiography. *International Journal of Environmental Research and Public Health*, 18(7), 3839. [2021 Impact Factor: 4.614, 71/210(33.6%) in PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH].
29. Pan HH*, Wu LF, Chang LF, Hung YC, **Lin C**, Ho CL (2021, Feb) Effects of Dispositional Resilience and Self-Efficacy on Practice in Advanced Care Planning of Terminally Ill Patients among Taiwanese Nurses: A Study Using Path Modeling. *International Journal of Environmental Research and Public Health*, 18(3):1-12. [2021 Impact Factor: 4.614, 71/210(33.6%) in PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH].

2020

30. Hsing SC, Lee CC, **Lin C**, Chen JT, Chen YH, Fang WH* (2020, Dec) The Severity of Diabetic Retinopathy Is an Independent Factor for the Progression of Diabetic Nephropathy. *Journal of Clinical Medicine*, 10(1):3. [2021 Impact Factor: 4.964, 54/172(31.1%) in MEDICINE, GENERAL & INTERNAL].
31. Wu LF, **Lin C**, Hung YC, Chang LF, Ho CL, Pan HH* (2020, Dec) Effectiveness of palliative care consultation service on caregiver burden over time between terminally ill cancer and non-cancer family caregivers. *Supportive Care in Cancer*, 28(12):6045-6055. [2021 Impact Factor: 3.359, 17/68(24.3%) in REHABILITATION].
32. Lo CH*, Hsu YJ, Hsu SN, **Lin C**, Su SL (2020, Nov) Factors associated with length of hospital stay among dialysis patients with nontraumatic acute abdomen: a retrospective observational study. *Singapore Medical Journal*, 61(12):605-612. [2021 Impact Factor: 3.331, 72/172(41.6%) in MEDICINE, GENERAL & INTERNAL].
33. Wu LF, Chang LF, Hung YC, **Lin C**, Tzou SJ, Chou LJ, Pan HH* (2020, Aug) The Effect of Practice toward Do-Not-Resuscitate among Taiwanese Nursing Staff Using Path Modeling. *International Journal of Environmental Research and Public Health*, 17(17):6350. [2021 Impact Factor: 4.614, 71/210(33.6%) in PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH].
34. Liu WT, **Lin C**, Tsai MC, Cheng CC, Chen SJ, Liou JT, Lin WS, Cheng SM, Lin CS*, Tsao TP* (2020, Jul) Effects of pitavastatin, atorvastatin, and rosuvastatin on the risk of new-onset diabetes mellitus: A single-center cohort study. *Biomedicines*, 8(11):1-12. [2021 Impact Factor: 4.757, 86/279(30.7%) in PHARMACOLOGY & PHARMACY].
35. Lin GM*, Nagamine M, Yang SN, Tai YM, **Lin C**, Sato H (2020, Jul) Machine Learning Based Suicide Ideation Prediction for Military Personnel. *IEEE Journal of Biomedical and Health Informatics*, 24(7):1907-1916. [2021 Impact Factor: 7.021, 4/57(6.1%) in MATHEMATICAL & COMPUTATIONAL BIOLOGY].
36. Chen HC, Chen WT, Sung TL, Tsai DJ, **Lin C**, Su H, Lin YF, Chiu HY, Su SL* (2020, Jun) PPARG Pro12Ala Polymorphism with CKD in Asians: A Meta-Analysis Combined with a Case-Control Study-A Key for Reaching Null Association. *Genes (Basel)*, 11(6):705. [2021 Impact Factor: 4.141, 72/175(40.9%) in GENETICS & HEREDITY].
37. Chiu CC, Chen CF, Hsiao PJ, Tsai DJ, Chang HL, Fang WH, Chen WT, Chan JS, Liao MT, Ho YJ, Su W, Chen YK, Hu HH, Lai ZZ, **Lin C*** (2020, May) A Superior odds ratio compared to the risk ratio when estimating moderator effects in meta-regression analyses of randomized controlled trials. *Journal of Medical Sciences*, 40(3):119-126. [Not included in JCR].
38. Wu YY, Huang TC, Ye RH, Fang WH, Lai SW, Chang PY, Liu WN, Kuo TY, Lee CH, Tsai WC, **Lin C*** (2020, Apr) A Hematologist-Level Deep Learning Algorithm (BMSNet) for Assessing the Morphologies of Single Nuclear Balls in Bone Marrow Smears: Algorithm Development. *JMIR Medical Informatics*, 8(4):e15963. [2021 Impact Factor: 3.231, 18/31(56.4%) in MEDICAL INFORMATICS].
39. Lu MH, Weng LT, Chen YL, **Lin C**, Wang CH, Pan HH* (2020, Mar) Predictors of professional quality of life among nursing staff following the Taiwan Formosa Fun Coast explosion. *Burns*, 46(2):423-429. [2021 Impact Factor: 2.609, 98/211(46.2%) in SURGERY].
40. Lin CS#, **Lin C**#, Fang WH, Hsu CJ, Chen SJ, Huang KH, Lin WS, Tsai CS, Kuo CC, Chau T, Yang SJ, Lin SH* (2020, Mar) A Deep-Learning Algorithm (ECG12Net) for Detecting Hypokalemia and Hyperkalemia by Electrocardiography: Algorithm Development. *JMIR Medical Informatics*, 8(3):e15931. [2021 Impact Factor: 3.231, 18/31(56.4%) in MEDICAL INFORMATICS].

41. Lee CH, Kang YN, Ho CL, [Lin C](#), Chen PH, Wu YY, Huang TC* (2020, Mar) Endocrine therapies in postmenopausal women with hormone receptor-positive, human epidermal growth factor receptor 2-negative, pretreated, advanced breast cancer. *Medicine*, 99(13): e19618. [2021 Impact Factor: 1.817, 122/172(70.6%) in MEDICINE, GENERAL & INTERNAL].
42. Jhou HJ, Chen PH, [Lin C](#), Yang LY, Lee CH*, Peng CK* (2020, Feb) High-flow nasal cannula therapy as apneic oxygenation during endotracheal intubation in critically ill patients in the intensive care unit: a systematic review and meta-analysis. *Scientific Reports*, 10(1):3541. [2021 Impact Factor: 4.996, 19/73(25.3%) in MULTIDISCIPLINARY SCIENCES].
43. Lee CH, Chen PH, [Lin C](#), Wang CY, Ho CL* (2020, Jan) A network meta-analysis of maintenance therapy in chronic lymphocytic leukemia. *PLoS One*, 15(1):e0226879. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].

2019

44. Lee CH, Wu YY, Huang TC, [Lin C](#), Zou YF, Cheng JC, Ho CL* (2019, Nov) Maintenance therapy for chronic lymphocytic leukaemia. *Cochrane Database of Systematic Reviews*, 2019(11):CD013474. [2021 Impact Factor: 12.008, 19/172(10.8%) in MEDICINE, GENERAL & INTERNAL].
45. Lai HC, Lee MS, [Lin C](#), Lin KT, Huang YH, Wong CS, Chan SM, Wu ZF* (2019, Aug). Propofol-based total intravenous anaesthesia is associated with better survival than desflurane anaesthesia in hepatectomy for hepatocellular carcinoma: a retrospective cohort study. *British Journal of Anaesthesia*, 123(2):151-160. [2021 Impact Factor: 11.719, 2/34(4.4%) in ANESTHESIOLOGY].
46. [Lin C](#), Lou YS, Tsai DJ, Lee CC, Hsu CJ, Wu DC, Wang MC, Fang WH* (2019, Jul) Projection Word Embedding Model With Hybrid Sampling Training for Classifying ICD-10-CM Codes: Longitudinal Observational Study. *JMIR Medical Informatics*, 7(3):e14499. [2021 Impact Factor: 3.231, 18/31(56.4%) in MEDICAL INFORMATICS].
47. Chen PH, Ho CL, [Lin C](#), Wu YY, Huang TC, Tu YK, Lee CH* (2019, May) Treatment Outcomes of Novel Targeted Agents in Relapse/Refractory Chronic Lymphocytic Leukemia: A Systematic Review and Network Meta-Analysis. *Journal of Clinical Medicine*, 8(5):E737. [2021 Impact Factor: 4.964, 54/172(31.1%) in MEDICINE, GENERAL & INTERNAL].
48. Tantoh DM, Lee KJ, Nfor ON, Liaw YC, [Lin C](#), Chu HW, Chen PH, Hsu SY, Liu WH, Ho CC, Lung CC, Wu MF, Liaw YC, Debnath T, Liaw YP* (2019, May) Methylation at cg05575921 of a smoking-related gene (AHRR) in non-smoking Taiwanese adults residing in areas with different PM2.5 concentrations. *Clinical Epigenetics*, 11(1):69. [2021 Impact Factor: 7.291, 19/175(10.6%) in GENETICS & HEREDITY].
49. Lin MH, Lee CH, [Lin C](#), Zou YF, Lu CH, Hsieh CH, Lee CH* (2019, May) Low-Dose Aspirin for the Primary Prevention of Cardiovascular Disease in Diabetic Individuals: A Meta-Analysis of Randomized Control Trials and Trial Sequential Analysis. *Journal of Clinical Medicine*, 8(5):E609. [2021 Impact Factor: 4.964, 54/172(31.1%) in MEDICINE, GENERAL & INTERNAL].
50. Lai JJ, [Lin C](#), Ho CL, Chen PH, Lee CH* (2019, Apr) Alternative-Dose versus Standard-Dose Trivalent Influenza Vaccines for Immunocompromised Patients: A Meta-Analysis of Randomised Control Trials. *Journal of Clinical Medicine*, 8(5):E590. [2021 Impact Factor: 4.964, 54/172(31.1%) in MEDICINE, GENERAL & INTERNAL].
51. Tantoh DM, Wu MF, Ho CC, Lung CC, Lee KJ, Nfor ON, Liaw YC, Hsu SY, Chen PH, [Lin C](#), Chu HW, Liaw YC, Liaw YP* (2019, Mar) SOX2 promoter hypermethylation in non-smoking Taiwanese adults residing in air pollution areas. *Clinical Epigenetics*, 11(1):46. [2021 Impact Factor: 7.291, 19/175(10.6%) in GENETICS & HEREDITY].

2018

52. Lin MC, Li CZ, Hsieh CC, Hong KT, Lin BJ, [Lin C](#), Tsai WC, Lee CH, Lee MG, Chung TT, Tang CT, Ju DT, Ma HI, Liu MY, Chen YH, Hueng DY* (2018, Nov) Preoperative grading of intracranial meningioma by magnetic resonance spectroscopy (1H-MRS). *PLoS One*, 13(11):e0207612. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
53. Lin BJ*, Hong KT, [Lin C](#), Chung TT, Tang CT, Hueng DY, Hsia CC, Ju DT, Ma HI, Liu MY, Chen YH (2018, Nov) Impact of global spine balance and cervical regional alignment on determination of postoperative cervical alignment after laminoplasty. *Medicine*, 97(45):e13111. [2021 Impact Factor: 1.817, 122/172(70.6%) in MEDICINE, GENERAL & INTERNAL].
54. Wu ZF, Lee MS, Wong CS, Lu CH, Huang YS, Lin KT, Lou YS, [Lin C](#), Chang YC, Lai HC* (2018, Nov) Propofol-based Total Intravenous Anesthesia Is Associated with Better Survival Than Desflurane Anesthesia in Colon Cancer Surgery. *Anesthesiology*, 129(5):932-941. [2021 Impact Factor: 8.986, 4/34(10.3%) in ANESTHESIOLOGY].
55. Hsu SN, Hsu YJ, [Lin C](#), Su SL, Lin SH* (2018, Sep) Proteinuria: Associated with poor outcome in patients with small cell lung cancer. *Journal of Cancer Research and Therapeutics*, 14(Supplement):S688-S693. [2021 Impact Factor: 1.331, 234/245(95.3%) in ONCOLOGY].
56. Chen YL, Lu MH, Weng LT, [Lin C](#), Huang PW, Wang CH, Pan HH* (2018, Aug) A Correlational Study of Acute Stress and Resilience Among Hospitalized Burn Victims Following the Taiwan Formosa Fun Coast Explosion. *Clinical Nursing Research*, 1054773818793599. [2021 Impact Factor: 1.724, 88/125(70.0%) in NURSING].
57. Lin FH, Chen HC, [Lin C](#), Chiu YL, Lee HS, Chang H, Huang GS, Chang HL, Yeh SJ, Su W, Wang CC*, Su SL* (2018, Aug) The increase in total knee replacement surgery in Taiwan: A 15-year retrospective study. *Medicine*, 97(31):e11749. [2021 Impact Factor: 1.817, 122/172(70.6%) in MEDICINE, GENERAL & INTERNAL].
58. Lee CH, [Lin C](#), Ho CL, Lin JC* (2018, Jun) Primary fungal prophylaxis in hematological malignancy: A network meta-analysis of randomized controlled trials. *Antimicrobial Agents and Chemotherapy*, pii: AAC.00355-18. [2021 Impact Factor: 5.938, 51/279(18.1%) in PHARMACOLOGY & PHARMACY].

59. Lee CH, [Lin C](#), Wang CY, Huang TC, Wu YY, Chien WC, Chen JH* (2018, May) Premorbid BMI as a prognostic factor in small-cell lung cancer-a single institute experience. *Oncotarget*, 9(37):24642-24652. [2016 Impact Factor: 5.168, 44/217(20.0%) in ONCOLOGY].
60. Huang YC, Wahlqvist ML, Lo YTC, [Lin C](#), Chang HY, Lee MS* (2018, May) A non-invasive modifiable Healthy Ageing Nutrition Index (HANI) predicts longevity in free-living older Taiwanese. *Scientific Reports*, 8:7113. [2021 Impact Factor: 4.996, 19/73(25.3%) in MULTIDISCIPLINARY SCIENCES].
61. Chang HF, Hsiao PJ, Hsu YJ, Lin FH, [Lin C](#), Su W, Chen HC*, Su SL* (2018, Mar) Association between angiotensin II receptor type 1 A1166C polymorphism and chronic kidney disease. *Oncotarget*, 9(18):14444-14455. [2016 Impact Factor: 5.168, 44/217(20.0%) in ONCOLOGY].
62. Chen HJ, [Lin C](#), Lee CH, Chen YH* (2018, Mar) Efficacy and Safety of Bevacizumab Combined with Mitomycin C or 5-Fluorouracil in Primary Trabeculectomy: A Meta-Analysis of Randomized Clinical Trials. *Ophthalmic Research*, 59(3):155-163. [2021 Impact Factor: 3.031, 31/61(50.0%) in OPHTHALMOLOGY].
63. Huang YH, [Lin C](#), Yang JH, Lin LC, Mou CY, Chiang KT, Lee MG, Chang HF, Chang HL, Su W, Yeh SJ, Chang H, Wang CC*, Su SL* (2018, Mar) No difference in the functional improvements between unilateral and bilateral total knee replacements. *BMC Musculoskeletal Disorders*, 19:87. [2021 Impact Factor: 2.562, 44/86(50.6%) in ORTHOPEDICS].

2017

64. [Lin C](#), Hsu CJ, Lou YS, Yeh SJ, Lee CC*, Su SL*, Chen HC* (2017, Nov) Artificial Intelligence Learning Semantics via External Resources for Classifying Diagnosis Codes in Discharge Notes. *Journal of Medical Internet Research*, 19(11):e380. [2021 Impact Factor: 7.093, 10/109(8.7%) in HEALTH CARE SCIENCES & SERVICES].
65. Su SL#, Chen WT#, Hsiao PJ, Lu KC, Lin YF, [Lin C](#), Su W, Yeh SJ, Chang H, Lin FH* (2017, Oct) Angiotensin II receptor type 1 A1166C modifies the association between angiotensinogen M235T and chronic kidney disease. *Oncotarget*, 8(64):107833-107843. [2016 Impact Factor: 5.168, 44/217(20.0%) in ONCOLOGY].
66. Huang YW, Wang Y, Lin Y, [Lin C](#), Lin YT, Hsu CC, Yang TC* (2017, Jul) Impacts of Penicillin Binding Protein 2 Inactivation on β -Lactamase Expression and Muropeptide Profile in *Stenotrophomonas maltophilia*. *mSystems*, 2(4):e00077-17 [2021 Impact Factor: 7.331, 27/136(19.5%) in MICROBIOLOGY].
67. Lee CH, Lin JC, Ho CL, Sun M, Yen WT, [Lin C](#)* (2017, Jul) Efficacy and safety of micafungin versus extensive azoles in the prevention and treatment of invasive fungal infections for neutropenia patients with hematological malignancies: A meta-analysis of randomized controlled trials. *PLoS One*, 12(7):e0180050. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
68. Chang WC, [Lin C](#), Lee CH, Sung TL, Tung TH, Liu JH* (2017, Jun) Vitrectomy with or without internal limiting membrane peeling for idiopathic epiretinal membrane: A meta-analysis. *PLoS One*, 12(6):e0179105. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
69. Yu YL, Yang YJ, [Lin C](#), Hsieh CC, Li CZ, Feng SW, Tang CT, Chung TT, Ma HI, Chen YH, Ju DT, Hueng DY* (2017, Jan) Analysis of volumetric response of pituitary adenomas receiving adjuvant CyberKnife stereotactic radiosurgery with the application of an exponential fitting model. *Medicine*, 96(4):e4662. [2021 Impact Factor: 1.817, 122/172(70.6%) in MEDICINE, GENERAL & INTERNAL].

2016

70. Chan WH, Lee MS, [Lin C](#), Wu CC, Lai HC, Chan SM, Lu CH, Cherng CH, Wu ZF* (2016, Oct) Comparison of Anesthesia-Controlled Operating Room Time between Propofol-Based Total Intravenous Anesthesia and Desflurane Anesthesia in Open Colorectal Surgery: A Retrospective Study. *PLoS One*, 11(10):e0165407. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
71. Lin BJ*, Chung TT, Lin MC, [Lin C](#), Hueng DY, Chen YH, Hsia CC, Ju DT, Ma HI, Liu MY, Tang CT (2016, Oct) Quantitative analysis of anatomical relationship between cavernous segment internal carotid artery and pituitary macroadenoma. *Medicine*, 5(41):e5027. [2021 Impact Factor: 1.817, 122/172(70.6%) in MEDICINE, GENERAL & INTERNAL].
72. [Lin C](#)#, Chen HC#, Fang WH#, Wang CC, Peng YJ, Lee HS, Chang H, Chu CM, Huang GS, Chen WT, Tsai YJ, Lin HL, Lin FH*, Su SL* (2016, Sep) Angiotensin-converting Enzyme Insertion/Deletion Polymorphism and Susceptibility to Osteoarthritis of the Knee: A Case-control Study and Meta-analysis. *PLoS One*, 11(9):e0161754. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
73. Feng SW, Chen Y, Tsai WC, Chiou HC, Wu ST, Huang LC, [Lin C](#), Hsieh CC, Yang YJ, Hueng DY* (2016, Jul) Overexpression of TELO2 decreases survival in human high-grade gliomas. *Oncotarget*, 7(29):46056-66. [2016 Impact Factor: 5.168, 44/217(20.0%) in ONCOLOGY].
74. [Lin C](#), Chu CM*, Su SL* (2016, Apr). Epistasis Test in Meta-Analysis: a Multi-Parameter Markov Chain Monte Carlo Model for Consistency of Evidence. *PLoS One*, 11(4):e0152891. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].

2015

75. Peng CJ, Lee MS, Wahlqvist ML, Pan WH, Lee WC, [Lin C](#), Guo HR* (2015, Nov) Needs-based food and nutrient security indices to monitor and modify the food supply and intakes: Taiwan, 1991–2010. *Food Policy*, 57:142-52. [2021 Impact Factor: 6.080, 3/21(11.9%) in AGRICULTURAL ECONOMICS & POLICY].
76. Lin BJ, Lin MC, Lin C, Lee MS, Feng SW, Ju DT, Ma HI, Liu MY, Hueng DY* (2015, Oct) Image analysis of open-door laminoplasty for cervical spondylotic myelopathy: Comparing the influence of cord morphology and spine alignment. *Clinical Neurology and Neurosurgery*, 137:72-78. [2021 Impact Factor: 1.885, 145/211(68.5%) in SURGERY].
77. Lu CH, Wu ZF, Lin BF, Lee MS, [Lin C](#), Huang YS, Huang YH* (2015, Oct) Faster extubation time with more stable hemodynamics during extubation and shorter total surgical suite time after propofol-based total intravenous anesthesia

- compared with desflurane anesthesia in lengthy lumbar spine surgery. *Journal of Neurosurgery-Spine*, 24:268–74. [2021 Impact Factor: 3.467, 58/211(27.2%) in SURGERY].
78. Fang WH, Huang GS, Chang HF, Chen CY, Kang CY, Wang CC, **Lin C**, Yang JH, Su W, Kao S, Su SL* (2015, Sep) Gender differences between WOMAC index scores, health-related quality of life and physical performance in an elderly Taiwanese population with knee osteoarthritis. *BMJ Open*, 5(9):e008542. [2021 Impact Factor: 3.017, 85/172(49.1%) in MEDICINE, GENERAL & INTERNAL].
 79. Yang HY, Chuang SY, Fang WH, Huang GS, Wang CC, Huang YY, Chu MY, **Lin C**, Su W, Chen CY, Yang YT, Su SL* (2015, Sep) Effect of RAGE polymorphisms on susceptibility to and severity of osteoarthritis in a Han Chinese population: a case-control study. *Genetics and Molecular Research*, 14(3):11362-70. [2015 Impact Factor: 0.764, 190/191(99.2%) in GENETICS & HEREDITY].
 80. Chen YG, Pan HH, Dai MS, **Lin C**, Lu CS, Su SL, Chang PY, Huang TC, Chen JH, Wu YY, Chen YC, Ho CL* (2015, Aug) Impact of Comorbidity and Age on Determinants Therapeutic Strategies in Advanced Pancreatic Head Cancer Patients With Obstructive Jaundices. *Medicine*, 94(31):e1298. [2021 Impact Factor: 1.817, 122/172(70.6%) in MEDICINE, GENERAL & INTERNAL].
 81. Hueng DY*, Tsai WC, Chiou HC, Feng SW, **Lin C**, Li YF, Huang LC, Lin MH (2015, Jul) DDX3X Biomarker Correlates with Poor Survival in Human Gliomas. *International Journal of Molecular Sciences*, 16(7):15578-15591. [2021 Impact Factor: 6.208, 69/296(23.1%) in BIOCHEMISTRY & MOLECULAR BIOLOGY].
 82. Chen JH, Hsu SN, Huang TC, Wu YY, **Lin C**, Chang PY, Chen YC, Ho CL* (2015, Jun) Prognostic Significance of Initial Serum Albumin and 24 Hour Daily Protein Excretion before Treatment in Multiple Myeloma. *PLoS One*, 10(6):e0128905. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
 83. Su SL, **Lin C**, Kao S, Wu CC, Lu KC, Lai CH, Yang HY, Chiu YL, Chen JS, Sung FC, Ko YC, Lee CT, Yang Y, Yang CW, Hwang SJ, Wang MC, Hsu YH, Wu MY, Hsueh YM, Chiou HY*, Lin YF* (2015, Jun) Risk factors and their interaction on chronic kidney disease: A multi-centre case control study in Taiwan. *BMC Nephrology*, 16:83. [2021 Impact Factor: 2.585, 58/90(33.9%) in UROLOGY & NEPHROLOGY].
 84. Su SL, Yang HY, Lee HS, Huang GS, Lee CH, Liu WS, Wang CC, Peng YJ, Lai CH, Chen CY, **Lin C**, Pan YT, Salter DM, Chen HC* (2015, Jun) Gene-gene interactions between TGF- β /Smad3 signalling pathway polymorphisms affect susceptibility to knee osteoarthritis. *BMJ Open*, 5(6):e007931. [2021 Impact Factor: 3.017, 85/172(49.1%) in MEDICINE, GENERAL & INTERNAL].
 85. **Lin C**, Chu CM, Lin J, Yang HY, Su SL* (2015, Apr) Gene-gene and gene-environment interactions in meta-analysis of genetic association studies. *PLoS One*, 10(4):e0124967. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].
- 2014**
86. Wu ZF, Jian GS, Lee MS, **Lin C**, Chen YF, Chen YW, Huang YS, Cherng CH, Lu CH* (2014, Dec) An Analysis of Anesthesia-Controlled Operating Room Time After Propofol-Based Total Intravenous Anesthesia Compared with Desflurane Anesthesia in Ophthalmic Surgery: A Retrospective Study. *Anesthesia & Analgesia*, 119(6):1393-406. [2021 Impact Factor: 6.627, 8/34(22.0%) in ANESTHESIOLOGY].
 87. Lin BJ, Chou KN, Kao HW, **Lin C**, Tsai WC, Feng SW, Lee MS, Hueng DY* (2014, Nov) Correlation between magnetic resonance imaging grading and pathological grading in meningioma. *Journal of Neurosurgery*, 22:1-8. [2021 Impact Factor: 5.408, 15/267(5.4%) in CLINICAL NEUROLOGY].
 88. Yang HY, Huang SM, Lu KC, Wu CC, Kang CY, Lin YF, **Lin C**, Lin FH, Kao SY, Su SL* (2014, Aug) A Functional Polymorphism in the Promoter Region of TLR3 Is Associated with Susceptibility to End-Stage Renal Disease. *American Journal of Nephrology*, 40(2):131-9. [2021 Impact Factor: 4.605, 21/90(22.8%) in UROLOGY & NEPHROLOGY].
 89. Cheng YS, **Lin C**, Cheng YP, Yu YL, Tang CT, Hueng DY* (2014, Jul) Epithelial cell transformation sequence 2 is a potential biomarker of unfavorable survival in human gliomas. *Neurology India*, 62(4):406-9. [2021 Impact Factor: 1.663, 251/274(91.4%) in NEUROSCIENCES].
 90. Cheng YP, **Lin C**, Lin PY, Cheng CY, Ma HI, Chen CM, Hueng DY* (2014, May) Midkine expression in high grade gliomas: Correlation of this novel marker with proliferation and survival in human gliomas. *Surgical Neurology International*, 5:78. [Not included in JCR].
 91. Su SL, Yang HY, Wu CC, Lee HS, Lin YF, Hsu CA, Lai CH, **Lin C**, Kao SY, Lu KC* (2014, Apr) Gene-gene interactions in renin-angiotensin-aldosterone system contributes to end-stage renal disease susceptibility in a Han Chinese population. *Scientific World Journal*, 2014:169798. [2013 Impact Factor: 1.219, 16/55(29.1%) in MULTIDISCIPLINARY SCIENCES].
 92. **Lin C**, Yang HY, Wu CC, Lee HS, Lin YF, Lu KC, Chu CM, Lin FH, Kao SY, Su SL* (2014, Jan) Angiotensin-Converting Enzyme Insertion/Deletion Polymorphism Contributes high risk for Chronic Kidney Disease in Asian male with hypertension—a Meta-Regression Analysis of 98 observational studies. *PLoS One*, 9(1):e87604. [2021 Impact Factor: 3.752, 29/73(39.0%) in MULTIDISCIPLINARY SCIENCES].