

# Ideological and Political Exploration of Academic Continuing Education Professional Diploma in Medical Imaging

Lin Sun<sup>1,3</sup>, Haitong Wang<sup>2,3</sup>, Kai Wang<sup>2</sup>, Lina Zhang<sup>1,4</sup>, and Chao Yang<sup>1,4</sup>

<sup>1</sup> The First Affiliated Hospital of Dalian Medical University

No.150 Lianhe Road, Xigang District, Dalian City, Liaoning Province 116000, China  
59139727@qq.com,3506155043@qq.com,wangkai19861217@126.com,zln201045@163.com,dryangchao@163.com

<sup>2</sup> Dalian Medical University

9 West Section of Lvshun South Road, Dalian City, Liaoning Province, 116044, China

<sup>3</sup> Lin Sun and Haitong Wang contributed equally to this work, they're co-first authors.

<sup>4</sup> Lina Zhang and Chao Yang contributed equally to this work, they're co-correspondence authors.

---

**Abstract.** In alignment with the 20th National Congress of the Communist Party of China's commitment to establish a healthier nation, the focus on healthcare strategically prioritizes human well-being. This necessitates redefining medical service delivery. Consequently, the training of medical students and continuing education is challenged. In recent years, the notion of incorporating "ideological and political education within the curriculum" is becoming more explicit, especially within university talent training. This paper, exploring the unique attributes of professional medical imaging student training and continuing education, proposes the innovative model of "3+4+2" ideological and political education at the First Affiliated Hospital of Dalian Medical University. It introduces a new system of "school-family-society" tripartite co-education, a new mechanism of "party committee-functional departments-teaching and research office-teachers" four-level linkage, and a novel approach of "party branch-teaching and research office" dual-wheel drive, integrating value shaping, knowledge imparting, and ability cultivation. The goal is to nurture Party talents and educate patriots, thereby enhancing the effectiveness of "comprehensive education" and bolstering the construction of new medical sciences.

**Keywords:** Curriculum ideological and political, Medical imaging, Imaging technology, Academic continuing education, Medical education.

---

## 1. Introduction

The 19th National Congress of the Communist Party of China proposed the implementation of the "Healthy China Strategy," aiming to comprehensively improve the health level of the people, promote the development of public health, and construct a Healthy China [1]. The 20th National Congress of the Party further emphasized the importance of advancing the construction of a Healthy China and prioritizing the safeguarding of people's health in strategic development [2]. In recent years, with the continuous deepening of medical reforms, the role of medical imaging in the medical process has become increasingly prominent, gradually becoming an important field of medical reform. Driven by factors such as favorable policies, technological advancements, and increasing demand, the development of medical imaging has been rapid, and its role has become increasingly significant [3]. There is also a growing demand in society for professionals in medical imaging. The role of continuing education in medical imaging professional qualifications in fulfilling the functions of medical talent training and social security services is becoming increasingly prominent. In the context of the new era, strengthening political literacy is of great significance for enhancing students' professional skills, cultivating good medical ethics, and fostering a positive medical atmosphere [4]. Adherence to continuing education principles, coupled with on-the-job learning adaptability, allows for a seamless integration of professional training with ideological and political education. By capitalizing on medical imaging expertise, we can incorporate moral education and socialist core values into continuous education, thereby enhancing student training quality and consistently contributing exceptional medical talent to society.

## 2. The Era Background of Integrating Ideological and Political Education Into Continuing Education Courses

In December 2016, General Secretary Xi Jinping pointed out at the National Conference on Ideological and Political Work in Colleges and Universities that "each and every course should adhere to a certain channel and fulfill its

responsibilities, so that all types of courses can align with ideological and political theory courses, forming a synergistic effect [5]”. This important statement provided theoretical guidance for universities to integrate ideological and political education into professional course education.

In July 2022, the Ministry of Education issued the ”Implementation Opinions of the Ministry of Education on Promoting the Reform of Continuing Education in Ordinary Higher Education Institutions in the New Era” (Teaching Staff [2022] No. 2), which stated the need to ”comprehensively promote the construction of curriculum ideological and political education reflecting the characteristics of continuing education [6].” Curriculum ideological and political education was included as an important component in the teaching requirements of continuing education.

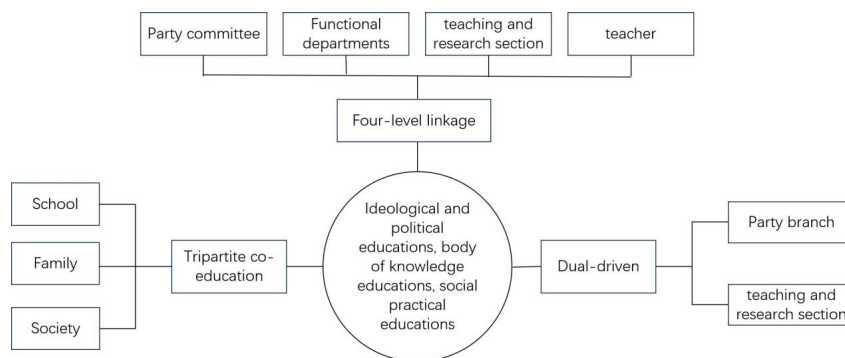
Facing the characteristics of diverse ideologies, low leaning foundations, and strong pragmatism among continuing education students, the Radiology Department of the First Affiliated Hospital of Dalian Medical University fully tapped into the ideological and political education resources inherent in the curriculum. They utilized a combination of strategies, namely the ”3+4+2” approach, to explore a new model of continuing education in medical imaging within the framework of curriculum ideological and political education. This model aims to unify explicit and implicit education, strengthen the integration of value shaping, knowledge imparting, and skill cultivation, and lead students through the example of teachers to undergo baptism, enhance their understanding, and improve their capabilities, thereby providing effective guarantees for improving the quality of continuing education.

### 3. New Paths for Continuing Education in Medical Imaging within the Perspective of Ideological and Political Education

Medical imaging is a highly specialized and practical discipline encompassing various modalities such as X-ray, digital radiography (DR), computed tomography (CT), magnetic resonance imaging (MRI), ultrasound, interventional radiology, nuclear medicine, etc. It is interconnected with diseases across various disciplines, providing increasing diagnostic information for clinical practice, thereby raising higher demands on the core curriculum of medical imaging technology.

Utilizing mixed teaching formats such as participatory, discussion-based, case-based, and project-based methods is a beneficial exploration tool [7]”. By integrating disease etiology, pathophysiology, anatomy, and other basic knowledge into teaching cases based on real cases, appropriately incorporating clinical realities such as disease progression, medical humanities, doctor-patient relationships, and healthcare policies and regulations, one can explore the ideological and humanistic elements behind the issues, thereby exploring the operability and entry points of ideological and political education in continuing education teaching.

This article, in line with the development direction of ideological and political education models in universities in the new era, analyzes the current status and shortcomings of ideological and political education in continuing education teaching in the field of medical imaging, aiming to construct a new model of coordinated education in ideological and political education, knowledge system education, and social practice education (as shown in Figure 1). This model endeavors to cultivate new talents in medical imaging who can adapt to the changes of the times.



**Fig. 1.** A new mode of continuing education for medical imaging major under the ideological and political perspective

### 3.1. Constructing a New Tripartite Education System of "School-Family-Society"

The alignment of various professional courses with ideological and political education to form a cohesive force has become a common consensus in today's universities [8]. Universities, especially those with a focus on practical abilities like medical schools, emphasize practical orientation in teaching, deepen the integration of theory and practice, fully mobilize medical and ideological teaching resources, and actively construct multidimensional "large classrooms" and interdisciplinary "large platforms." [9]"

The Radiology Department seizes the "main battlefield" of curriculum construction and the "main channel" of classroom teaching. It takes the expression of the "value of life" for patients and the "self-discipline and social commitment" for doctors as the main themes, infusing values of loving the Party, loving the country, and loving the people. It focuses on teaching students how to proficiently master basic knowledge of X-ray, DR, CT, MRI, ultrasound, interventional radiology, and nuclear medicine, etc., and conducts teaching activities to provide more precise imaging diagnostics for clinical departments, allowing students to gain a deeper understanding of the value and medical positioning of the medical imaging profession.

School education and family education are two complementary and interacting factors that mutually support and enhance the overall effectiveness of education [10]. Combining family education with school education can effectively expand the implicit pathways of ideological and political education, allowing students to receive moral education in their daily lives while receiving professional ideological and political education at school [11]. By establishing shared educational goals between schools and families, clarifying the responsibilities of both sides, strengthening mutual communication between schools and families, constructing interactive mechanisms between schools and families, enriching educational pathways, breaking through information barriers, and timely resolving students' learning and life difficulties, we can promote students' psychological health, help them form correct worldviews, outlooks on life, and values, thereby strengthening their career ideals and inheriting excellent traditional culture.

When designing ideological and political education within the teaching and research office, practical exploration and exchange are incorporated, emphasizing distinctive practices and internalization through communication. Practical and pragmatic ideological education training courses are set up, leveraging the characteristics of medical imaging technology courses. Various levels of practical learning opportunities, including in-class, extracurricular, and community activities, are utilized. Building upon grassroots hospital-based teaching collaborations such as "village-level outreach" and "medical association," students engage in medical practice to understand diseases, patients, and master doctor-patient communication skills. Practical training is enhanced to cultivate communication skills that delve into the essence of problems and truly develop students' ability to handle real-world challenges. Through specific forms such as volunteer services, distinctive practices are completed, effectively integrating ideological and political education into practical experiences to achieve dissemination and internalization. Additionally, agreements are established with medical imaging technology companies to jointly build off-campus practical teaching bases for students. Tailored to the characteristics of continuing education in medical imaging and adult learning patterns, students engage with diverse patients in real scenarios, guided by case studies, to conduct immersive emotional experiences in doctor-patient communication skills training. This approach enhances students' clinical practice abilities, understanding of medical ethics, and skills in handling doctor-patient relationships.

### 3.2. Establishing a New Mechanism of Four-level Linkage Involving the Party Committee, Functional Departments, Teaching and Research Offices, and Teachers

The hospital's Party committee places equal importance on ideological and political education for students and staff, with the hospital's Party secretary personally delivering Party lectures to enhance the dissemination, infectiousness, and attractiveness of ideological education. The Party committee prioritizes curriculum ideological and political education, forming a guidance team emphasizing the integration of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era into textbooks and classrooms. By using Xi Jinping Thought to shape students' ideals and values, ideological education and professional education are synergized to maximize collaborative effects.

Under the leadership of the Party committee, the functional departments serve as the bridge and link between ideological education and professionalism. The Party affairs department strengthens communication with the teaching and research office, incorporating student ideological education into the hospital's overall plan. Quarterly prompts for organizational life activities are issued, covering various aspects such as theoretical learning, learning from role models, and building a clean and honest Party conduct. This provides training and material support for the teaching and research office. Student ideological work is included in the evaluation of Party branch secretaries, urging the teaching and research office to enhance awareness and ability in curriculum ideological and political education.

With the comprehensive support of the Party committee and its functional departments, the Radiology Department focuses on the core work of curriculum ideological and political education. Firstly, it fully explores the ideological elements behind the "stories", constructs a curriculum ideological and political case database containing typical and timely cases, and uses facts to nurture and practice socialist core values, guiding students to enhance their patriotism, professionalism, integrity, and friendliness. Secondly, the department strengthens education on Chinese excellent traditional culture, organizing activities such as lectures on Chinese classics during leisure time, using historical allusions to inspire students' fighting spirit and cooperation, guiding them to persevere and unite in their learning journey. Thirdly, it integrates legal education into the curriculum, introducing medical disputes cases from clinical work into teaching to not only reinforce students' awareness of service attitude but also enhance their diagnostic abilities from the perspective of disease identification. Fourthly, it conducts education on professional ideals and ethics. Professor Lang Zhijin, a senior expert in the department, persists in consultations despite reaching the age of retirement, embodying the noble professional spirit of cherishing life, saving lives, dedicating oneself, and boundless love.

Teachers play a key role in curriculum ideological and political education, serving as the bridge and link for curriculum integration[12]. As disseminators of thought and knowledge, they fully exert their leadership role in the classroom, subtly conveying ideological and political education to students. Particularly during major medical tasks, teachers set examples through their actions, integrating the compassion and boundless love of medical professionals into professional teaching. Responding promptly to the calls of the Party Central Committee, all teachers in the teaching and research office, as medical workers, rush to the forefront. Despite statutory holidays or routine rest periods, the director of the teaching and research office and Party branch secretary lead by example by canceling their vacations and personally participating in duty work. Party members, mobilized by the Party branch, submit applications one after another, obediently responding to the Party's call, and resolutely go to the front line where the people need them most. The teaching and research office has repeatedly sent teachers to support medical work in Xinjiang and Tibet, bringing medical technology to the snowy plateau and improving the local medical level while also delivering the warmth of the Party to ethnic minority brothers and sisters. During this period, some clinical interns also participated, being inspired by the teachers. They feel proud to be a radiology assistant doctor and feel great honor in being able to use their professional skills to safeguard the health of the people.

### **3.3. Exploring the New Approach of "Party Branch-Teaching and Research Office" Dual-driven Model**

Hospitals establish party branches within departments, with the Radiology Teaching and Research Office independently forming a party branch. This is carried out in strict compliance with the "Dual Leadership Figure Cultivation Project", where qualified academic leaders are cultivated and selected as the party branch secretaries. Through systematic training, the ideological awareness, party spirit, service consciousness, and party work capabilities of these secretaries are effectively enhanced, providing strong organizational support for the implementation of ideological and political education within the curriculum [13]. The Radiology Department's party branch fully utilizes the functions of the teacher's party branch, integrating ideological and political education into lesson preparation and incorporating it into party member meetings. While teachers who are party members study Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, important instructions and directives from General Secretary Xi Jinping, as well as innovative theories and current policies of the Party, they also discuss and update ideological and political education content, ensuring that innovative Party theories are promptly conveyed to the students. The Teaching and Research Office regularly organizes collective lesson preparations, emphasizing the integration of ideological and political content; during the review of teaching plans, the emphasis is placed on ideological and political key points. Furthermore, through activities such as teaching seminars, teaching observations, and teaching competitions, efforts are continuously made to enhance teachers' awareness and enthusiasm in adhering to ideological and political guidance in teaching.

The rapid development of society and the influence of different cultures and ideologies affect the perceptions of the younger generation. Some students lack a sense of responsibility, mainly manifesting as self-centeredness, a lack of dedication, and an inability to strive for excellence in their studies, demonstrating tendencies towards individualism and hedonism [14]. To comprehensively implement the need for moral education, the party branch fully implements the main responsibility for Party conduct and clean governance, continuously strengthening the construction of medical ethics, professional ethics, and academic ethics among branch teachers. Focusing on teachers as a key link, efforts are made to strengthen their sense of responsibility and mission in educating and cultivating students, leading by example. Seizing the critical period of the formation of young students' values, the Teaching and Research Office incorporates medical ethics education into the classroom, establishing positive examples and analyzing negative cases, allowing students to more intuitively perceive the importance of cultivating moral character through clinical practice and guiding them in fastening the "first button" of life.

## **4. Under the Perspective of Ideological and Political Education, Achievements in Continuing Education in Medical Imaging Profession**

### **4.1. Comprehensive improvement in the Quality of Ideological and Political Education Work**

The Teaching and Research Office, situated within Dalian Medical University, upholds high-quality education and has been honored with titles such as "2021 Brand Influence School" and "2021 Excellent Cases of Distance and Continuing Education in Chinese Universities". The First affiliated Hospital of Dalian Medical University has been recognized as an "Outstanding Correspondence Station (Teaching Point) of Continuing Education in Chinese Universities in 2021". The discipline of Medical Imaging has evolved into a key clinical specialty in Liaoning Province, a key discipline in Dalian, and a key discipline of Dalian Medical University. The discipline's leaders set examples by guiding students to integrate learning, thinking, and application, and have received numerous honors such as the Second "Most Beautiful Female Doctor" in China, Outstanding Teacher in Liaoning Province, and Model in Three Aspects of Education in the University. One teacher from the office has satisfactorily completed the task of assisting Tibet, and the outstanding deeds of two teachers have been reported by media outlets such as CCTV News, People's Daily, and Learning Powers (LP). Students continually draw inspiration from the words and deeds of their teachers, deeply understanding the spirit of the great anti-epidemic struggle, which prioritizes life, unity of the nation, self-sacrifice, respect for science, and shared destiny. This enhances their patriotism, sparks their interest in learning, and motivates them to dedicate themselves to safeguarding the health and lives of the people [15,16].

### **4.2. Prominent Role of Party Building in Leading by Example**

The party branch of the Teaching and Research Office adheres to deeply integrating party building work with central tasks, using party building to drive teaching. Party members of the branch have been honored with titles such as Excellent Communist Party Member of the University, Excellent Class Advisor, and Advanced Education Worker in Clinical Teaching. They have also achieved excellent results, winning first place as a group in the National Medical Imaging Technology Professional Student Practice Skills Competition. In just one year in 2022, the Teaching and Research Office added 28 national-level academic group part-time positions, obtained 3 provincial-level teaching and research projects, 8 projects on new technologies, published 106 papers, edited 1 academic monograph, participated in the editing of 3 books, and obtained 3 invention patents [17-19]. These achievements serve as excellent examples for students, guiding them to broaden their horizons, stimulate intrinsic motivation, and inspire research thinking.

### **4.3. Social Practice Effectively Nurtures Students**

The Teaching and Research Office attaches great importance to students' practical learning, focusing on clinical practice to enhance academic performance through participation in clinical work with teachers and simulated operations at external bases. Students are trained in the authentic environment of clinical colleges to improve their communication skills with patients and their families, enhancing their ability to solve practical problems. This cultivates successors of socialism who not only have solid basic knowledge and skills in clinical medicine but also proficiently grasp the basic theory and skills of various modern medical imaging technologies, with high comprehensive quality and independent professional application abilities. At the same time, students are encouraged to actively engage in public welfare activities during holidays, further realizing their life values and enhancing their sense of professional honor, thereby strengthening their "Four Confidences." Through the implementation of comprehensive practice activities combining professional social practice and public welfare social practice, the multidimensional training of students in continuing education in medical imaging profession is enhanced, promoting the quality improvement of training new medical talents to a new level [20-24].

In this contemporary context, medical services are projected to contribute to social progression through innovative methods. This presents escalating demands and significant challenges for medical education and continuing medical education. Reinforcement of ideological and political education and moral integrity education is a necessary course, reflective of societal progression. Integrating persistent ideological and political education within continuous education in the medical imaging field promotes efficient utilization of subject collaboration and mutual support, enhancing educational outcomes, and propelling coordinated advancement of ideological and political education, knowledge system education, and social practice education. This contributes to the accumulation of experience and practical support for creating a new development pattern in medical education, realizing the overall level improvement of medical education with first-class influence and supporting the cross-integration construction of new medical disciplines.

## 5. Conflict of Interest

The authors declare that there are no conflict of interests, we do not have any possible conflicts of interest.

**Acknowledgments.** This study was supported by Liaoning Province education and teaching "14th Five-Year Plan" 2022 annual project (JG22DB214), 2022 Teaching Reform of Continuing Education of Liaoning Adult Education Society (LCYJGZXY-B22100). Chao Yang and Lina Zhang is the study project leader, they conceived and participated in the study design and coordination.

## References

1. T. Li, S. Li. Healthy China Strategy and Occupational Health Protection[J]. *China Occupational Medicine*. 2020, 47(5): 505-511.
2. S. Yin, H. Li, A. A. Laghari, T. R. Gadekallu, et al. An Anomaly Detection Model Based on Deep Auto-encoder and Capsule Graph Convolution via Sparrow Search Algorithm in 6G Internet-of-Everything[J]. *IEEE Internet of Things Journal*, 2024. DOI: 10.1109/JIOT.2024.3353337.
3. N. Wu, D. Shi. The Healthy China of Socialism with Chinese Characteristics in the New Era[J]. *Social Scientist*, 2022(12): 30-37.
4. S. Liu. The Trends and Challenges of Medical Imaging in the New Era[J]. *Chinese Journal of Radiology*, 2021, 55(2): 97-100.
5. B. Fu, F. Lü, R. Yu, et al. Exploration on the Importance and Methods of Integrating Ideological and Political Elements in Undergraduate Medical Imaging Teaching[J]. *China Continuing Medical Education*. 2023, 15(16): 153-157.
6. Lee W O, Ho C H. Ideopolitical shifts and changes in moral education policy in China[J]. *Journal of moral education*, 2005, 34(4): 413-431.
7. The Ministry of Education's Implementation Opinions on Advancing the Reform of Ordinary Colleges and Universities' Continuing Education in the New Era (Jiangshi No. 2, 2022)[J]. *People's Republic of China Government Gazette*, 2022, (27): 30-34.
8. Luo Z, Feng D. Physiology Course Ideological and Political Education Based on the "Ya Yi on the Way" WeChat Publication[J]. *Basic Medical Education*, 2020, 22: 915-917.
9. S. Yin, H. Li, L. Teng, A. A. Laghari, V. V.a Estrela. Attribute-based Multiparty Searchable encryption model for Privacy Protection of Text Data[J]. *Multimedia Tools and Applications*, 2023. <https://doi.org/10.1007/s11042-023-16818-4>.
10. Gao H, Zhao X. Inner Logic of Ideological and Political Education through All Curricula in the New Era[J]. *Journal of Beijing Union University: Humanities and Social Sciences Edition*, 2022, 20(2): 51-57.
11. Wang X. The Logical Approach to the Collaborative Education of "Enlarged Ideological and Political Course": Essence of Connotation, Implication of Value and Way of Construction[J]. *Journal of Weinan Normal University*, 2018, (31): 230.
12. Sun K. Consensus Resonance to create a new ecology of home-school Co-education[J]. *School Administration*, 2021, (10): 53-55.
13. Zhao N. Research on the Hidden Ideological and Political Education Model in Universities from the Perspective of Family School Co education[J]. *Modern Vocational Education*, 2018, (31): 230.
14. Cheng Y, Shi K. Exploration of the "Double Leaders" Cultivation Project for Party Branch Secretaries of University Teachers[J]. *Western Quality Education*, 2018, 4(16): 36-37.
15. He W, Wang L. A Review and Outlook on Curriculum Ideological and Political Research in China[J]. *School Party Building and Ideological Education*, 2021, (4): 26-30.
16. Zhao L, Gu L, Dong W, et al. Effective Paths for Medical Colleges to Strengthen Medical Ethics and Medical Conduct Education for Students[J]. *Western Quality Education*, 2023, 9(4): 61-64.
17. Qiu S, An J, Wang H, et al. Construction and exploration of first-class medical imaging courses from the perspective of cultivating virtue and talent[J]. *Continuing Medical Education in China*. 2023, 15(18): 191-194.
18. Liu N, Wang Z. Practice of "Five Connections" in Integrated Teaching of Ideological and Political Courses in Medical Vocational Colleges[J]. *Continuing Medical Education*, 2023, 37(4): 1-4.
19. Zhang L, Wang L, Liu A, et al. Exploration and practice of integrating ideological and political education with PBL teaching in medical imaging courses[J]. *Health Vocational Education*, 2022, 40(2): 74-75.
20. Zhang L, Zhang W, Liu A, et al. Exploration and Practice of Dai Minghuan in Undergraduate Teaching Management of Medical Imaging[J]. *China Higher Medical Education*, 2021, 06:65-66.
21. Zhang L, Wang L, Liu A, etc The application of diversified formative assessment in medical imaging diagnosis internship teaching[J]. *Modern Medicine and Health*, 2021, 37(03): 492-449.
22. S. Yin, H. Li, Y. Sun, M. Ibrar, and L. Teng. Data Visualization Analysis Based on Explainable Artificial Intelligence: A Survey[J]. *IJLAI Transactions on Science and Engineering*, vol. 2, no. 3, pp. 24C31, May 2024.
23. Jiang Y, Yin S. Heterogenous-view Occluded Expression Data Recognition Based on Cycle-Consistent Adversarial Network and K-SVD Dictionary Learning Under Intelligent Cooperative Robot Environment[J]. *Computer Science and Information Systems*, vol. 20, no. 4, 2023.
24. Meng X, Wang X, Yin S, et al. Few-shot image classification algorithm based on attention mechanism and weight fusion[J]. *Journal of Engineering and Applied Science*. 70, 14 (2023). <https://doi.org/10.1186/s44147-023-00186-9>

## Biography

**Lin Sun** is with the The First Affiliated Hospital of Dalian Medical University, No.150 Lianhe Road, Xigang District, Dalian City, Liaoning Province 116000, China. Research direction is medical image processing, computer application and AI.

**Haitong Wang** is with the Dalian Medical University, 9 West Section of Lvshun South Road, Dalian City, Liaoning Province, 116044, China. Research direction is medical image processing, computer application and AI.

**Kai Wang** is with the Dalian Medical University, 9 West Section of Lvshun South Road, Dalian City, Liaoning Province, 116044, China. Research direction is medical image processing, computer application and AI.

**Lina Zhang** is with the The First Affiliated Hospital of Dalian Medical University, No.150 Lianhe Road, Xigang District, Dalian City, Liaoning Province 116000, China. Research direction is medical image processing, computer application and AI.

**Chao Yang** is with the The First Affiliated Hospital of Dalian Medical University, No.150 Lianhe Road, Xigang District, Dalian City, Liaoning Province 116000, China. Research direction is medical image processing, computer application and AI.