**INTRODUCTION**

Machine learning (ML) is a science which aims to make machine capable of learning. Machine learning returned to the public’s vision after the famous competition between Alpha Go of Google and the Go player Li Sedol, ending with the score 4:1 in 2015. And this event made machine learning more well know among people even among those who were not familiar to computer science and it has caused intense debate in related field. Actually, although machine learning is a young branch of AI, it is not a new subject. ML is broadly defined as the application of certain computer algorithms to a set of data known to the event outcomes, and the ability to learn to training data and predict new data based on learning outcomes. Its core is induction and summary instead of deductive. Early in the medium of 1950s, Samuel, a computer scientist of United States, designed a chess program that could learn by itself through continuous play. This program shows people the ability of machine at the first time, meanwhile, the unpredictable potential of machine to learn came into people’s sight. However, as the research continued, machine learning entered a period of cooling off. Until 1970s, it staged a comeback gradually. And during this period of continuous research and development, until today, machine learning has become an important subject including data mining, pattern recognition, natural language processing and so on. It has also become a core of AI.

In today’s society, medical care problems have become a hot topic, and problems such as the unbalance and insufficient allocation of medical resources has become increasingly apparent. In this situation, the application of ML has become the unavoidable trend in the current development of medical care. As early as 1972, the scientists in the University of Leeds in the UK has been trying to use artificial intelligence (ANN) algorithms to judge abdominal pain. Now, more and more researchers are committed to the combination of ML and medical care. The methods of pathological diagnosis of tumors, lung cancer, etc. by ML has gradually entered the field of vision. Some companies, such as Alibaba, Amazon, and Baidu have established their own research team working for it. This introduction of ML in medical care has greatly saved medical resources and provided a new way for citizens to see a doctor and facilitate people’s lives. At the same time, the demand of people also provides a new impetus for the research and development of ML, with promoting its continuous improvement. B.