

温州肯恩大学
WENZHOU-KEAN UNIVERSITY

Research study on future trend of Artificial Intelligence market in China

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JIN Sijie

1025660

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Research Study on Future Trend of Artificial

Intelligence Market in China

Sijie Jin (Bernie)

Abstract

Artificial Intelligence is one of the hottest topics all over the world and a lot of AI companies appeared during recent years including China. The purpose of this study is just to explore the potential future trend of the artificial intelligence market in China so that providing a reference for investors when they want to step into the artificial intelligence market. The researcher used the quantitative method and modeling to conduct this study. To accomplish this purpose, the researcher used a questionnaire to gather the information, 150 participants filled out the questionnaire which asked them about their understanding of artificial intelligence and its application in their life. Additionally, the researcher also gathered the data of 15 artificial intelligence companies from Bloomberg and used R-programming to do modeling and came out with the results. The conclusion showed that artificial intelligence is popular among Chinese people, and a great proportion of them benefited from using the AI application. Moreover, the graph obtained by modeling showed that the artificial intelligence market in China was developing well and displaying an increasing trend. Therefore, investors can choose the AI industry as their option.

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Introduction

With the big data era drawing near, the artificial intelligence industry meets its second spring. At this moment, a great number of artificial intelligence companies appear all over the world. China is no exception. Following this trend, Chinese AI companies develop at a thunder-like speed, overcoming lots of difficulties in front of them. Moreover, some of them welcomed their IPO recently. Attracted by the rapid development of the AI industry, large cash flow collected from Chinese investors come into this industry. However, there are still a lot of investors who stay with hesitation, without knowing the future trend of the AI industry. They don't want to put their money into risk.

Some information displays the positive trend of the future Chinese AI company. A report (Holst,2018) related to the world artificial intelligence industry stated that "China had the world's second large number of artificial intelligence companies, and it also had the world's largest AI patent applications. What's more, a lot of Chinese STEM students graduated each year." This data implicates that China has a good AI development environment. It has enough places (companies) to develop AI; it has enough people expert in this area to promote the progress; its government also embraces the innovation. Additionally, artificial intelligence has its applications in many kinds of areas. For instance, in the recent smartphone, we have Face ID to help us unlock our phone or help us pay which makes our lives more convenient; cleaning robot release housewife from doing

hard housework. In this condition, it seems that the Chinese AI industry has a rather bright future. Chinese investors can just buy AI stock reassuringly.

However, some obstacles exist. For example, the development of AI companies occurs recently which means it only exists for a short period. We cannot easily predict the future trend just from a short time bloom. What if some potential problems hide in the artificial industry and we have not found them until then. Moreover, maybe at the beginning of the stage, the expense to expend the AI industry is less compared with the future cost. Therefore, we cannot determine what the Chinese AI companies will be in the future. These are some of the main reasons that part of the investor who is unwilling to trust the AI industry and buy their stocks.

In order to let investors have a better understanding of the Chinese AI industry and also hope the Chinese AI industry has a good future, The researcher desire to do this research. This research can be divided into three sections --- the basic requirement, trend analysis, potential market. In the first section, the researcher will focus on the basic environment for artificial intelligence companies to develop which includes government policy, companies' number, experts and patent.;. As for the second section, the data of 15 listed companies were used to help estimate the market trend. Basing on their year reports including year's revenue, year's profit and so on, the researcher used R-programming to help build the model to get the approximate trend of the artificial intelligence market in China can be predicted. In the third part, the Chinese AI market and the world's AI market

were compared. By listing the strengths of Chinese AI companies, the researcher analyzed which industry would be the potential market for the Chinese AI companies. The AI industry in each country is different, knowing their advantages and weakness will be helpful to find the potential market for the Chinese AI industry. In this part, the data from the year report, information on the AI industry over the world will be important.

Literature Review

Currently, artificial intelligence presents thunder-like development in China. From 2010 to 2014, a large quantity of AI companies appeared. In order to better know the future trend of the artificial intelligence industry in China. We need to analyze it from my directions including basic elements, its applications and, its potential market.

Innovation is a good motive for AI companies to develop in China. In the article written by Downes et.al (2016), Chinese business style—open innovation is introduced. The authors claimed that with the rapid development of technology, the Chinese companies gradually found their suitable business style—open innovation. With the implementation of this style, Chinese business achieved great acceleration. The authors first defined what is open innovation, through controlling and obtaining full ownership

of technical solutions, speeding up its development so that risk and capital costs can be reduced. Then the risk of open innovation and a vivid example of Haier solving this risk was discussed in which customers, suppliers, entrepreneur and stakeholders could cooperate and participate in product innovation. At last, the authors concluded that open innovation could help Chinese companies achieve further success. From this article, we can just find a basic factor which has affected the AI industry in the past.

Similarly, in another research conducted by Gabriel (2016), the significance of innovation is emphasized again. In this research, the researchers stated the current status of innovation in China. Innovation had already taken place in China, however, only at outset, innovation had much potential to develop in the future. Moreover, in the last 30 years, with a large number of multinational corporations entering the Chinese market, doing research and developing new products, MNCs had taken up much Chinese market. Also, the Chinese market had its dependence on these foreign companies. If Chinese local companies wish to find their own flourishing, they need to innovate not imitate. Fortunately, with the impact of MNCs, Chinese companies had already gained much experience from cooperating with them, and they had their own ability to innovate.

Innovation is the prerequisite for a company to develop its technology, especially artificial intelligence companies. Apart from innovation, other elements also play an essential role in speeding up the development of AI companies. Holst (2018) wrote a

report on artificial intelligence over the world. In his report, it was not difficult to find China has the largest number of students who graduated from STEM majors. Moreover, China has the world's largest number of patents in the artificial intelligence field and world's second largest number of AI companies. Additionally, the contribution of China to the world AI industry ranked second just below the U.S.A. Chinese had a good condition for its companies to develop artificial intelligence.

Another element that will contribute to artificial intelligence is government policy. In the research article did by Soofi (2016), the author emphasized the significance of government in helping progress its technology companies. Chinese had its unique government structure compared to developed countries like the U.S.A, the U.K., the government had its ability to guide their market, therefore, once the government focused their attention on one field, this field could develop rapidly. Currently, the Chinese government was actively involved in assisting private companies, especially technology companies. The findings of this research can help me determine the effect of government policy on the development of artificial intelligence companies.

Surrounding condition is also an important factor which can determine the development trend of the AI industry. Duan et.al (2019) claimed that with the sharply raising of big data, the artificial intelligence field embraced its new generation. This article briefly talked about the history of AI in the past, and its new present with the impact on big data. The researchers offered twelve research propositions related to AI-implement and

AI-human interaction which helped to analyze the effect of AI on the decision-making process. Relating this research with the performance of Chinese AI companies in the past few years, we can approximately conclude some possible reasons for their decision making.

The development of artificial intelligence is a good representation of the development of a country. In recent years, Chinese artificial intelligence companies produced many products applying to diverse industries. In a survey conducted by Rath and Rautaray (2014), face detection was a very popular product in the artificial intelligence field. This application had been used in different places such as forensics and mobile phone production. In this article, the authors showed the principle of face detection and how it could help us analyze as well as the advantages and disadvantages. The conclusion of this paper apparently shows one of the applications of artificial intelligence products which provides evidence for the information of AI products I collected and helps me analyze the potential market in this industry.

Apart from this face detection application, artificial intelligence can also help in other places. Allam and Dhunny (2019) did research related to the application of artificial intelligence on smart cities. With the development of technology and science. Modern cities tend to use specialized technologies to manage to help them manage different kinds of areas in the cities. Adapting the concept of the Internet of Things (IoT), combining with big data and artificial intelligence, this new AI will help maintain the sustainability

of the city. In order to prove their hypothesis, the authors first stated the popularity of big data and artificial intelligence from 2004-2018, stating that the popularity was increasing from time to time, which played a basic part to help introduce some examples of application of artificial intelligence on smart cities in different kinds of domains including education, environment, energy, etc.. After that, the authors talked about the relationship among government, culture and smart city. Eventually, the conclusion came up that the implementation of AI in Smart Cities is practical. AI substantially help aid urban cities in many domains which will accelerate the development of the cities.

Research Design

The researcher used a quantitative strategy to conduct this study. Firstly, the researcher used the questionnaire to gather the data from the participants. This data was about the attitude of Chinese people towards the artificial intelligence industry in China. With this data, the researcher was easy to get the basic background of the development of AI companies in China. Secondly, the researcher used modeling to obtain the graph of the basic data including annual revenue, profit margin of 15 AI Chinese companies and predicted their future trend in the next 5 years. Then the researcher compared the

outcome with other reports like the study did by statistisa.com to check the validity of this data. Thirdly, this study was a cross-sectional study in which different factors were analyzed.

❖ **Study Population and Sampling Technology**

The study population was the people in China. The participants were randomly chosen using a questionnaire website called “Wenjuan Xing”. This method could decrease the bias in this study.

❖ **Sample Size**

The Sample size of this study was 150 randomly chose Chinese citizens. Moreover, the AI companies used to do modeling were collected based on the TOP 15 Chinese AI companies list.

❖ **Research Instrumentation**

The researcher gained the data through an online survey and data from Bloomberg. The data from questionnaire was used to assess the people’s thinking towards artificial intelligence companies. The statista from Bloomberg was used to build the model.

❖ **Data Collection Procedure**

The researcher first edited the questions that would be answered through a free online questionnaire website called “Wenjuan Xing”. After that, the researcher used the function of this website to deliver this questionnaire to 150 randomly selected people

chosen by “Wenjuan Xing”. As for the 15 AI companies’ data. The researcher went to Bloomberg lab at Wenzhou-Kean University and searched for the information there.

❖ **Data Analysis**

The researcher used Excel and Word to sort the data collected by the questionnaire. By sorting the data, the researcher could get the relationship of the attitude of Chinese people towards this industry with the development data of the AI industry. As for the 15 AI companies’ data, the researcher used R programming to conduct the study. Setting years as the independent variable and annual revenue and profit margin as the dependent variable, the researcher could estimate the function formula of this development.

❖ **Data to be used**

The data in this study can be divided into three categories. The first category is the questionnaire data which just collected from the questionnaire filled by 150 participants. This data is related to the attitude of Chinese people towards the artificial intelligence industry’s development. The data is used to calculate one of the most important factors --- support from people that will contribute to the whole industry

development.

Net Profit/m		2011	2012	2013	2014	2015	2016	2017	2018
东方国信	DFGX	57.57	70.75	90.24	136	229	328	410	518
东方网力	DFWL	54.31	78.21	102	136	249	335	385	315
京东方	JDF	561	258	2353	2562	1636	1883	7568	3435
佳都新太	JDXT	46.74	121	90.94	115	170	108	213	262
华宇软件	HYRJ	81.17	99.3	102	147	208	272	381	498
卓翼科技	ZYKJ	98.5	84.94	89.58	44.32	-54.23	16.82	20.49	-103
四维图新	SWTX	28.1	14	10.5	11.8	13	15.7	26.5	47.9
拓斯达	KSD	0	25.11	32.38	46.71	62.34	77.57	13.8	17.2
欧比特	OBT	32.51	25.33	28.01	25.06	57.83	84.59	121	94.93
海康威视	HKWS	1481	2137	3067	4665	5869	7424	9411	11400
熙菱信息	XLKJ	0	15.8	16.93	24.54	28.42	42.6	80.67	22.45
神州泰岳	SZTY	353	429	518	633	351	507	120	80.25
科大智能	KDZN	54.23	28.61	9.56	76.89	137	277	337	393
科大讯飞	KDXF	133	182	279	379	425	484	435	542
金溢科技	JYKJ	0	44.98	48.38	57.79	140	122	89.42	21.65

The second data is the year report data of 15 Chinese artificial intelligence companies in China. These data were collected from year reports posted on each company's official website and Bloomberg Terminal in Wenzhou-Kean. These data include the annual revenue, net profit of these 15 companies over the last 8 years. Using these data and put them into the R-programming program and adopting the regression method, the researcher expected to get an approximate trend of the development in this industry.

At last, the data from previous studies. Up to now, the researcher has found 10 critical kinds of researches which can be referred to. From the report did by statista.com, the researcher can get information about the world artificial intelligence companies developing trends, and the basic development environment including patents number, STEM graduated students each year, the number of AI companies. The most important data in this report is the prediction of next 3-4 years of the artificial intelligence industry in China and all over the world. The researcher can use this prediction and compare it with the result of this study. If the prediction trend of both studies is almost similar, the probability of this trend is higher. In addition to these data, the data about the

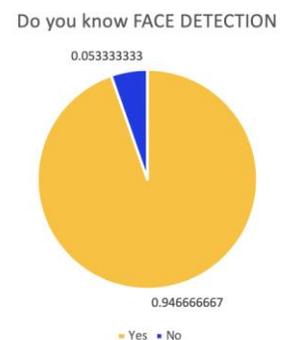
components of the artificial intelligence industry in China is also essential. Knowing the components of this market, it is easy to find what is the strength and what is the weakness, and it will be helpful for the researcher to determine which market is the most potential for future development.

Findings

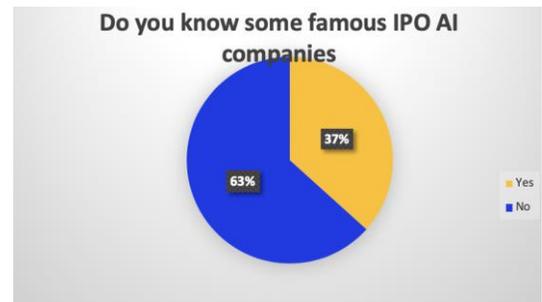
Questionnaire Result

As for the questionnaire, 150 Chinese citizens were randomly chosen by online questionnaire platform “Wenjuan Xing”. Here are some reports.

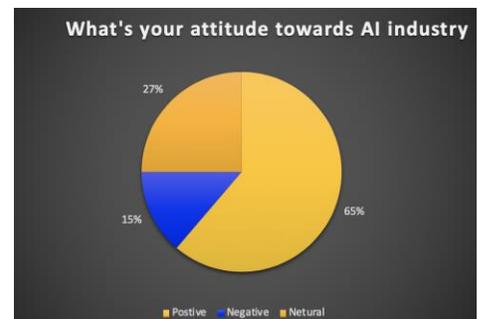
For the question “Do you know Face Detection technology?”. More than 94% of participants answered “Yes”. Face detection is a rather significant application of artificial intelligence. High spread of this technology means the products of AI tend to have a good market.



The result of the question “Do you know some famous IPO AI companies?” demonstrate a bad situation of current AI industry. Only 37% of participants knew some famous IPO AI companies. This was not good news. People have familiarity tendency; they are more willing to invest the companies which they know.



The question “What is your attitude towards AI industry?” More than 65% of people chose to hold positive attitude which shows a positive trend of Chinese AI industry.



The Result of 15 AI Companies

In this section, the researcher evaluated the future trend of Chinese AI industry using least squared method by testing the linear regression and quadratic regression with R programming. The researcher gathered annual revenue from 2010-2018.

Annual Revenue (million)

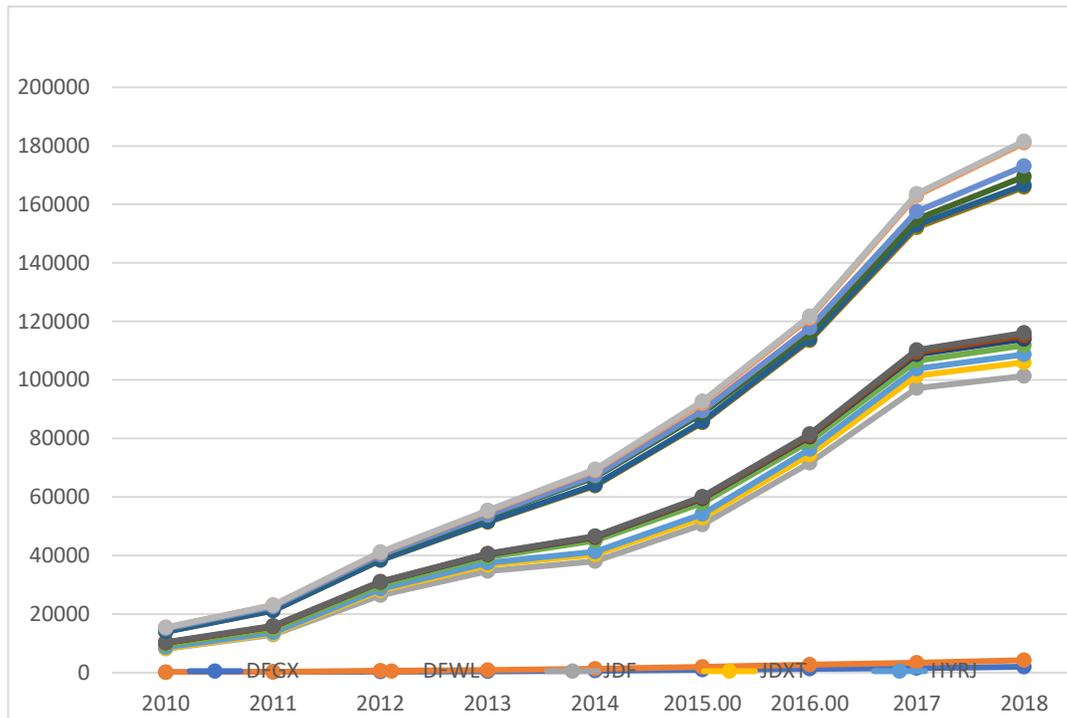


Figure-1

Figure-1 demonstrated each annual revenue data of 15 AI companies. It is not difficult to find that each company has a positive trend.

```
> x<-c(2010,2011,2012,2013,2014,2015,2016,2017,2018)
> y<-c(5174.17,8400.48,17573.48,22915.32,24235.84,32828.12,47701.57,65034.75,66368.37)
> X=matrix(c(1,1,1,1,1,1,1,1,1,2010,2011,2012,2013,2014,2015,2016,2017,2018),nrow=9,ncol=2)
> Y=matrix(c(5174.17,8400.48,17573.48,22915.32,24235.84,32828.12,47701.57,65034.75,66368.37),nrow=9,ncol=1)
> XT=t(X)
> e=XT%*%X
> q<-XT%*%Y
> solve(e,q)
      [,1]
[1,] -16242502.99
[2,]      8080.81
```

Figure-2

Figure-2 is R codes of annual revenue of each company. Before computing the regression. The researcher used weight method to come out with industry annual

revenue. First, summed up all annual revenue data then made proportion for each company. Next, multiplied proportion of each company with its annual revenue, and added them up to get industry number. Letting years as X value and annual revenue as Y value. Assuming equation of this data as $Y = \beta_0 + \beta_1 X + V_i$. V_i is noise distribution which is normal distribution with mean equals 0, standard deviation equals 1. Then the researcher used least squared method with matrix form to compute two estimators. Here the principle was normal equation. $\beta_0 \sum N + \beta_1 \sum X_i = \sum Y_i$, $\beta_0 \sum X_i + \beta_1 \sum X_i^2 = \sum X_i Y_i$. The consequence of running R code showed estimation equation is $Y_i = 16242502.00 + 8080.81 X_i$. The slope was positive showed the positive trend of future annual revenue.

```

> w=lm(y~x)
> summary(w)

Call:
lm(formula = y ~ x)

Residuals:
    Min       1Q   Median       3Q      Max
-8012.2 -1251.9   394.9  1797.1  8544.3

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -1.624e+07  1.486e+06  -10.93 1.19e-05 ***
x              8.081e+03  7.379e+02   10.95 1.17e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 5716 on 7 degrees of freedom
Multiple R-squared:  0.9449,    Adjusted R-squared:  0.937
F-statistic: 119.9 on 1 and 7 DF,  p-value: 1.172e-05

> cor(x,y)
[1] 0.9720346

```

Figure-3

Then, the researcher computed the p-value to determine the whether this evaluation is appropriate. In figure-3 the P -value is $1.172 \cdot 10^{-05}$ which was very small. The correlation coefficient number is 0.97, displaying the β_0 β_1 computed were good estimator.

The figure-4 shows the graph of this estimation.

Apparently, there is a positive trend for the whole industry.

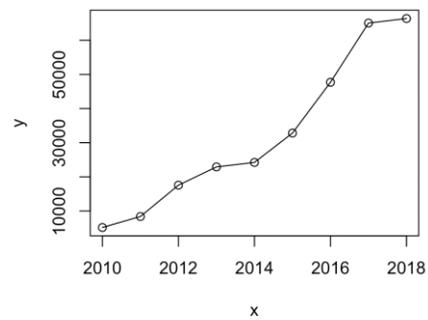


Figure-4

Net Profit (million)

In this part. The researcher used the same method to do the regression. However, the time period was from 2011-2018.

	2011	2012	2013	2014	2015	2016	2017	2018
DFGX	57.57	70.75	90.24	136	229	328	410	518
DFWL	54.31	78.21	102	136	249	335	385	315
JDF	561	258	2353	2562	1636	1883	7568	3435
JDXT	46.74	121	90.94	115	170	108	213	262
HYRJ	81.17	99.3	102	147	208	272	381	498
ZYKJ	98.5	84.94	89.58	44.32	-54.23	16.82	20.49	-103
SWTX	28.1	14	10.5	11.8	13	15.7	26.5	47.9
KSD	0	25.11	32.38	46.71	62.34	77.57	13.8	17.2
OBT	32.51	25.33	28.01	25.06	57.83	84.59	121	94.93
HKWS	1481	2137	3067	4665	5869	7424	9411	11400
XLKJ	0	15.8	16.93	24.54	28.42	42.6	80.67	22.45
SZTY	353	429	518	633	351	507	120	80.25
KDZN	54.23	28.61	9.56	76.89	137	277	337	393
KDXF	133	182	279	379	425	484	435	542
JYKJ	0	44.98	48.38	57.79	140	122	89.42	21.65

Figure-5

```

> x<-c(2011,2012,2013,2014,2015,2016,2017,2018)
> y<-c(898.96,1355.25,2243.38,3196.10,3954.87,4973.20,7479.96,8144.21)
> X=matrix(c(1,1,1,1,1,1,1,1,2011,2012,2013,2014,2015,2016,2017,2018),nrow=8,ncol=2)
> Y=matrix(c(898.96,1355.25,2243.38,3196.10,3954.87,4973.20,7479.96,8144.21),nrow=8,ncol=1)
> XT=t(X)
> e=XT**%X
> q<-XT**%Y
> solve(e,q)
      [,1]
[1,] -2161281.683
[2,]  1074.863

```

Figure-6

Figure-6 tells us that the estimation equation is $Y_i = -2161281.683 + 1074.863X_i$. Here Y_i means net profit and X_i means years. It is easy to find that there is a positive trend.

```

Call:
lm(formula = y ~ x)

Residuals:
    Min       1Q   Median       3Q      Max
-669.8 -376.2  -81.7  421.1  762.1

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -2.161e+06  1.815e+05  -11.91 2.12e-05 ***
x             1.075e+03  9.009e+01   11.93 2.10e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 583.9 on 6 degrees of freedom
Multiple R-squared:  0.9596,    Adjusted R-squared:  0.9528
F-statistic: 142.3 on 1 and 6 DF,  p-value: 2.1e-05

> cor(x,y)
[1] 0.9795676

```

Figure-7

From figure-7, the P -value and correlation coefficient were also good. It was a good estimation.

Figure-8 shows the whole plot and graph.

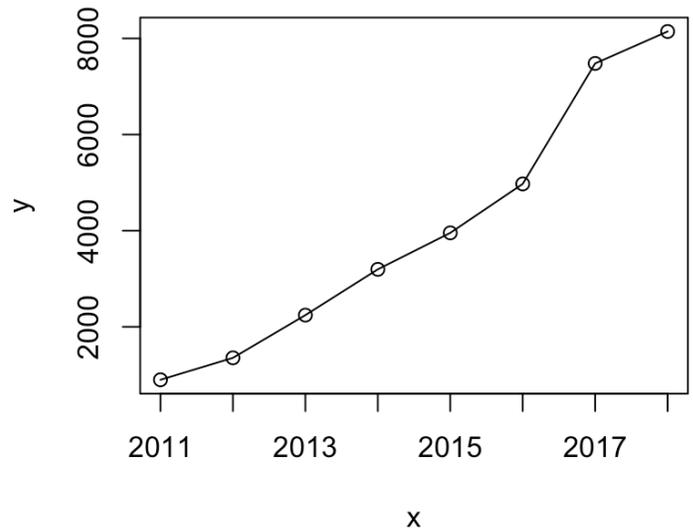
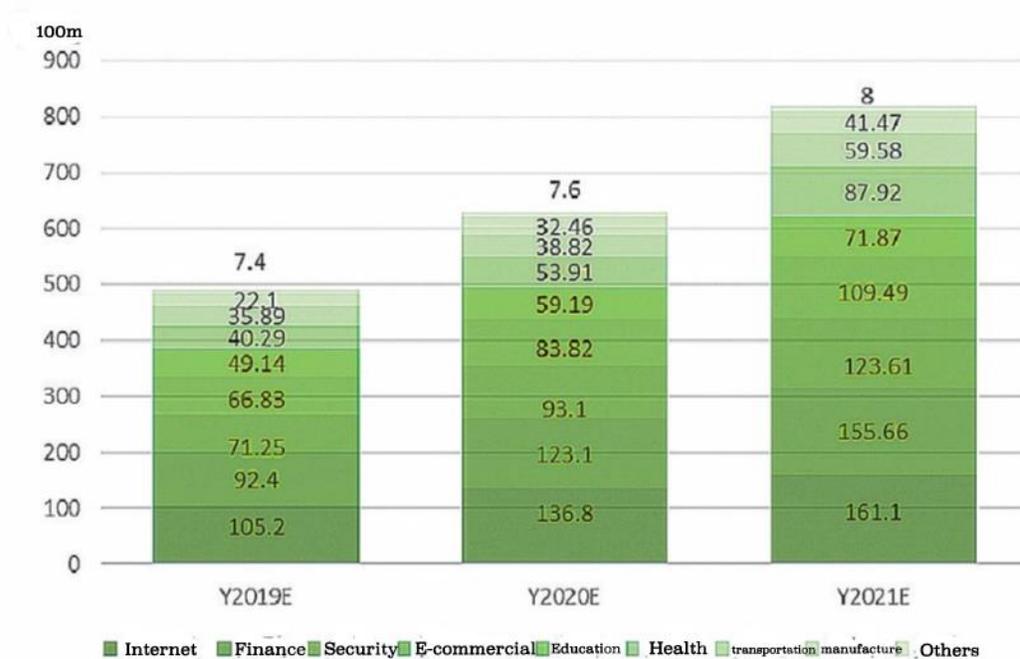


Figure-8

Potential Market

The data gathered from previous studies are useful. The researcher has a basic understanding of the development of the whole AI industry over the last 10 years. Some data like China ranked second in the world AI industry, China has the world's largest number of patents in the artificial intelligence field and China has the world's largest number of graduated STEM students and so on are all important for the researcher to know the basic environment to develop Chinese AI companies. What's more, the proportion of the artificial intelligence industry is another important element to help the researcher determine the future market. Finance and the internet are the most two profitable markets for the AI industry which will be the future potential market to be further explored.



Conclusion

Limitation

There are some limitations to this study. The first limitation is that the sample size of the questionnaire was small. There were 150 participants in this questionnaire, however, this was just a tiny part of Chinese people. Their performance could not represent the feelings of all Chinese people. Moreover, there were only 15 AI companies used to establish the model. Although they were the top 15 AI companies in the Chinese AI industry, they could not represent all the AI companies in China—some small AI companies maybe play an important role in accelerating the development of the whole industry. What's more, the data used to analyze this research was not enough, the researcher could only the recent 4 years of these 15 companies which made this prediction untenable to some extent. Eventually, the time to do this research was short, the researcher could not analyze and display the research fully.

Contribution

The contribution of this study was stunning. Firstly, there were just few extant study related to AI industries in China. Therefore, investigating this field could improve Chinese people's understanding towards the artificial intelligence industry in China, helping them to invest when they were staying with hesitation towards the AI industry. Moreover, this study could help AI companies attract some investment, promoting their

development and innovation which could make the Chinese AI industry more blooming and improve people's lives through contributing much to the total GDP. Secondly, this model was not complete and still had some places to improve. Being the reference of later people studying in this field, this model could be developed step by step and eventually maybe being the standard model in this field.

All in all, although this study had some limitations and could not demonstrate the total trend of this industry, it actually had some contributions not only for the investors but also for the scholars.

Reference

- Allam, Z., & Dhunny, Z. A. (2019). On big data, artificial intelligence and smart cities. *Cities*, 89, 80-91.
- Downes, L., Nunes, P., & Qui, S. (2016). *Open Innovation, Chinese Style*. Boao Review, 41-44.
- Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). *Artificial intelligence for decision making in the era of Big Data—evolution, challenges and research agenda*. International Journal of Information Management, 48, 63-71.
- Gabriel, S. J. (2016). *China's next strategic advantage: From imitation to innovation*. *Choice*, 54(2), 256. Retrieved from <https://kean.idm.oclc.org/login?url=https://search.proquest.com/docview/1822947348?accountid=11809>
- Holst, A. (2018). *Artificial Intelligence (AI) | Statista*. Retrieved 18 September 2019, from <https://www.statista.com/study/59297/artificial-intelligence-ai/>
- Jarrahi, M. H. (2018). *Artificial intelligence and the future of work: human-AI symbiosis in organizational decision making*. Business Horizons, 61(4), 577-586.
- Obschonka, M., & Audretsch, D. B. (2019). *Artificial intelligence and big data in entrepreneurship: A new era has begun*. Small Business Economics, , 1-11. doi:<http://dx.doi.org/10.1007/s11187-019-00202-4>
- Rath, S. K., & Rautaray, S. S. (2014). *A survey on face detection and recognition techniques in different application domain*. International Journal of Modern

Education and Computer Science, 6(8), 34-44.

doi:<http://dx.doi.org/10.5815/ijmeecs.2014.08.05>

Soofi, A. S. (2017). *A comparative study of chinese and iranian science & technology, and techno-industrial development policies*. Technological Forecasting and Social

Change, 122, 107. Retrieved from

<https://kean.idm.oclc.org/login?url=https://search.proquest.com/docview/1957>

[220433?accountid=11809](https://kean.idm.oclc.org/login?url=https://search.proquest.com/docview/1957220433?accountid=11809)Walcott, S. M. (2017). *Chinese science and technology industrial parks*. Routledge.

Yang, L., & Zhu, M. (2019). *Review on the status and development trend of AI industry*.

Piscataway: The Institute of Electrical and Electronics Engineers, Inc. (IEEE).

Retrieved from

<https://kean.idm.oclc.org/login?url=https://search.proquest.com/docview/2232>

[754300?accountid=11809](https://kean.idm.oclc.org/login?url=https://search.proquest.com/docview/2232754300?accountid=11809)

Appendix

Regression Data

Revenue/Million	2010	2011	2012	2013	2014	2015.00	2016.00	2017	2018
东方国信 DFGX	121	179	313	468	651	931.1	1277.7	1506.0	1996.2
东方网力 DFWL	0	0	305	437	640	1017.0	1481.2	1854.7	2247.3
京东方 JDF	8025	12741	25772	33774	36816	48623.7	68895.7	93800.5	97108.9
佳都新太 JDXT	125	292	1609	2115	2265	2264.8	2848.2	4312.0	4680.1
华宇软件 HYRJ	399	465	546	670	903	1351.7	1820.1	2338.1	2708.5
卓翼科技 ZYKJ	871	1238	1470	2044	3887	3779.5	2698.0	2763.2	3097.5
四维图新 SWTX	675	867	864	881	1059	1506.2	1585.3	2156.5	2133.7
拓斯达 KSD	0	0	92.41	152	214	302.2	433.1	764.4	1198.1
歌比特 DBT	176	178	161	151	177	388.8	559.9	738.9	906.0
海康威视 HKWS	3605	5232	7214	10700	17200	25271.4	31934.5	41905.5	49837.1
熙菱信息 XLKJ	0	0	185	225	288	404.0	539.7	798.3	650.9
神州泰岳 SZTY	842	1157	1410	1906	2605	2773.5	2019.5	2026.5	2936.6
科大智能 KDZN	138	193	264	333	615	857.9	1734.0	2559.3	3593.8
科大讯飞 KDXF	436	557	784	1254	1775	2500.8	3320.5	5444.7	7917.2
金溢科技 JYKJ	0	0	268	355	427	752.1	668.7	622.6	604.1
Market Size									
	15413	23099	41257.41	55465	69522	92724.59952	121816.1349	163591.1551	181616.0355
Proposition									
DFGX	0.8%	0.8%	0.76%	0.8%	0.9%	1.0%	1.0%	0.92%	1.1%
DFWL	0.0%	0.0%	0.74%	0.8%	0.9%	1.1%	1.2%	1.13%	1.2%
IDF	52.1%	55.2%	62.47%	60.9%	53.0%	52.4%	56.6%	57.34%	53.5%
IDXT	0.8%	1.3%	3.90%	3.8%	3.3%	2.4%	2.3%	2.64%	2.6%
HYRJ	2.6%	2.0%	1.32%	1.2%	1.3%	1.5%	1.5%	1.43%	1.5%
ZYKJ	5.7%	5.4%	3.56%	3.7%	5.6%	4.1%	2.2%	1.69%	1.7%
SWTX	4.4%	3.8%	2.09%	1.6%	1.5%	1.6%	1.3%	1.32%	1.2%
KSD	0.0%	0.0%	0.22%	0.3%	0.3%	0.3%	0.4%	0.47%	0.7%
DBT	1.1%	0.8%	0.39%	0.3%	0.3%	0.4%	0.5%	0.45%	0.5%
HKWS	23.4%	22.7%	17.49%	19.3%	24.7%	27.3%	26.2%	25.62%	27.4%
XLKJ	0.0%	0.0%	0.45%	0.4%	0.4%	0.4%	0.4%	0.49%	0.4%
SZTY	5.5%	5.0%	3.42%	3.4%	3.7%	3.0%	1.7%	1.24%	1.6%
KDZN	0.9%	0.8%	0.64%	0.6%	0.9%	0.9%	1.4%	1.56%	2.0%
KDXF	2.8%	2.4%	1.90%	2.3%	2.6%	2.7%	2.7%	3.33%	4.4%
IYKJ	0.0%	0.0%	0.65%	0.6%	0.6%	0.8%	0.5%	0.38%	0.3%
DFGX	0.95	1.39	2.37	3.95	6.10	9.35	13.40	13.86	21.94
DFWL	0.00	0.00	2.25	3.44	5.89	11.15	18.01	21.03	27.81
IDF	4178.33	7027.71	16098.83	20565.82	19496.24	25497.74	38965.38	53783.65	51923.45
IDXT	1.01	3.69	62.75	80.65	73.79	55.32	66.59	113.66	120.60
HYRJ	10.33	9.36	7.23	8.09	11.73	19.70	27.20	33.42	40.39
ZYKJ	49.22	66.35	52.38	75.33	217.32	154.05	59.75	46.67	52.83
SWTX	29.56	32.54	18.09	13.99	16.13	24.46	20.63	28.43	25.07
KSD	0.00	0.00	0.21	0.42	0.66	0.99	1.54	3.57	7.90
DBT	2.01	1.37	0.63	0.41	0.45	1.63	2.57	3.34	4.52
HKWS	843.19	1185.07	1261.39	2064.18	4255.34	6887.53	8371.76	10734.50	13675.77
XLKJ	0.00	0.00	0.83	0.91	1.19	1.76	2.39	3.90	2.33
SZTY	46.00	57.95	48.19	65.50	97.61	82.96	33.48	25.10	47.48
KDZN	1.24	1.61	1.69	2.00	5.44	7.94	24.68	40.04	71.11
KDXF	12.33	13.43	14.90	28.35	45.32	67.45	90.51	181.21	345.14
IYKJ	0.00	0.00	1.74	2.27	2.62	6.10	3.67	2.37	2.01

Net Profit/m		2011	2012	2013	2014	2015	2016	2017	2018
东方国信	DFGX	57.57	70.75	90.24	136	229	328	410	518
东方网力	DFWL	54.31	78.21	102	136	249	335	385	315
京东方	JDF	561	258	2353	2562	1636	1883	7568	3435
佳都新太	JDXT	46.74	121	90.94	115	170	108	213	262
华宇软件	HYRJ	81.17	99.3	102	147	208	272	381	498
卓翼科技	ZYKJ	98.5	84.94	89.58	44.32	-54.23	16.82	20.49	-103
四维图新	SWTX	28.1	14	10.5	11.8	13	15.7	26.5	47.9
拓斯达	KSD	0	25.11	32.38	46.71	62.34	77.57	13.8	17.2
欧比特	OBT	32.51	25.33	28.01	25.06	57.83	84.59	121	94.93
海康威视	HKWS	1481	2137	3067	4665	5869	7424	9411	11400
熙菱信息	XLKJ	0	15.8	16.93	24.54	28.42	42.6	80.67	22.45
神州泰岳	SZTY	353	429	518	633	351	507	120	80.25
科大智能	KDZN	54.23	28.61	9.56	76.89	137	277	337	393
科大讯飞	KDXF	133	182	279	379	425	484	435	542
金溢科技	JYKJ	0	44.98	48.38	57.79	140	122	89.42	21.65
		2981.13	3614.03	6837.52	9060.11	9521.36	11977.28	19611.88	17544.38
DFGX		1.93%	1.96%	1.32%	1.50%	2.41%	2.74%	2.09%	2.95%
DFWL		1.82%	2.16%	1.49%	1.50%	2.62%	2.80%	1.96%	1.80%
JDF		18.82%	7.14%	34.41%	28.28%	17.18%	15.72%	38.59%	19.58%
JDXT		1.57%	3.35%	1.33%	1.27%	1.79%	0.90%	1.09%	1.49%
HYRJ		2.72%	2.75%	1.49%	1.62%	2.18%	2.27%	1.94%	2.84%
ZYKJ		3.30%	2.35%	1.31%	0.49%	-0.57%	0.14%	0.10%	-0.59%
SWTX		0.94%	0.39%	0.15%	0.13%	0.14%	0.13%	0.14%	0.27%
KSD		0.00%	0.69%	0.47%	0.52%	0.65%	0.65%	0.07%	0.10%
OBT		1.09%	0.70%	0.41%	0.28%	0.61%	0.71%	0.62%	0.54%
HKWS		49.68%	59.13%	44.86%	51.49%	61.64%	61.98%	47.99%	64.98%
XLKJ		0.00%	0.44%	0.25%	0.27%	0.30%	0.36%	0.41%	0.13%
SZTY		11.84%	11.87%	7.58%	6.99%	3.69%	4.23%	0.61%	0.46%
KDZN		1.82%	0.79%	0.14%	0.85%	1.44%	2.31%	1.72%	2.24%
KDXF		4.46%	5.04%	4.08%	4.18%	4.46%	4.04%	2.22%	3.09%
JYKJ		0.00%	1.24%	0.71%	0.64%	1.47%	1.02%	0.46%	0.12%
DFGX		1.11	1.39	1.19	2.04	5.51	8.98	8.57	15.29
DFWL		0.99	1.69	1.52	2.04	6.51	9.37	7.56	5.66
JDF		105.57	18.42	809.74	724.48	281.10	296.03	2920.40	672.54
JDXT		0.73	4.05	1.21	1.46	3.04	0.97	2.31	3.91
HYRJ		2.21	2.73	1.52	2.39	4.54	6.18	7.40	14.14
ZYKJ		3.25	2.00	1.17	0.22	-0.31	0.02	0.02	-1.46
SWTX		0.26	0.05	0.02	0.02	0.02	0.02	0.04	0.13
KSD		0.00	0.17	0.15	0.24	0.41	0.50	0.01	0.02
OBT		0.35	0.18	0.11	0.07	0.35	0.60	0.75	0.51
HKWS		735.75	1263.62	1375.72	2401.98	3617.67	4601.69	4515.98	7407.50
XLKJ		0.00	0.07	0.04	0.07	0.08	0.15	0.33	0.03
SZTY		41.80	50.92	39.24	44.23	12.94	21.46	0.73	0.37
KDZN		0.99	0.23	0.01	0.65	1.97	6.41	5.79	8.80
KDXF		5.93	9.17	11.38	15.85	18.97	19.56	9.65	16.74
JYKJ		0.00	0.56	0.34	0.37	2.06	1.24	0.41	0.03
		898.96	1355.25	2243.38	3196.10	3954.87	4973.20	7479.96	8144.21