
Final Report For MAFS 6010U From Project Sweetie

Abstract

1 This report includes four parts of conclusion on our project in this semester
2 and gain in the course: Progress and learning from group project (technical re-
3 port); Reflection on an AI article and a finance one (essay); Synthesis and sugges-
4 tions for further study; Note individual contribution.

5 **1 Progress and learning from group project (technical report)**

6 The progress and our acquisition are divided into the following three subtitles because of our group
7 project have research on three different directions to track and monitor private AI companies.

8 **1.1 Progress and gain from idea one (Management Board Background Check)**

9 **1.1.1 Progress of idea one**

10 The main work of this idea is collecting the background information of management board of AI
11 companies from internet, sorting and analyzing this information to get some management current
12 phenomenon of these companies and also finding reasons to explain it and the improvement ways of
13 the companies, more importantly, comparing the analyze results of these same subindustry companies
14 and make conclusions.

15 Sensetime is one of the AI company that mainly been researched on the basic information (such as
16 name, position, gender, age, working time, previous work experience of core management. From
17 these basic information, there are two conclusions: the first one is that the percentage of female
18 manager shares one third, which is actually a higher percentage compared with other AI companies
19 that I have researched; the second one is that working duration time in Sensetime and previous
20 working experience are negative related, which is mainly because that the management team owned
21 by the core technology is the founder and some experienced managers have been employed from
22 other companies last year, which indicates Sensetime begin to focus on their company management.

23 Then, the education level and degree type of management in Sensetime have been researched and it is
24 a conclusion that most of managers acquired PhD in computer science (core technology owner) and
25 management and economics related master.

26 Finally, compare the News key words of Sensetime CEO with that in Megvii CEO by automatically
27 opening Baidu search CEO names and getting ten news to extract words with high repetition rate
28 through webpage crawling. The same key words of these news of this two CEO are founder, artificial
29 intelligence, face recognition and Alibaba, which are about the role of the CEO, main business and
30 core competitiveness, and the partner. The difference key words between of two kind of news are
31 mainly face 3D reconstruction, which researched by Sensetime and Face++, which is the core product
32 of Megvii.

33 **1.1.2 Gain from idea one**

34 1. Improving my web crawling techniques, mainly using python requests, beautifulsoup, webdriver,
35 re and so on packages. Get the name of the management from the official website, find these core

36 managers' name and automatically open the search page through google, Baidu, Wikipedia, etc., get
37 the key information and analyze the basic information through the obtained webpage. In the process,
38 I manually search the internet at first and realize automation search and get information later, and I
39 can find more information fast and efficient through code.

40 2. Learning some in-depth analysis methods, in fact, the choice of SenseTime as the main research
41 object is because many AI companies are small scale, the management information data of these
42 companies is not representative, there is no need to analyze because the individual influence is
43 too large. As a well-developed company, SenseTime has significantly improved its scale in recent
44 years. In such a relatively large-scale company research management makes more contributions for
45 the company's decision-making impact. The comparison method involves horizontal and vertical
46 comparisons, comparing the same company at different times and also compare the AI company with
47 other companies in same industry.

48 3. Getting the construction and features of the core management in some AI companies from learning
49 and researching the basic information of management board and realizing that the management board
50 is an important role for developing the companies because they can deal with the difficulties and crises
51 encountered in the business enterprises in many aspects and develop future development directions
52 and set the culture of the companies(such as vision and mission), which mean that their personal
53 and education really influences. For these AI companies, the CEO and other founders are mainly
54 having the core technology and most of them have acquired the PhD of related area same as the
55 technology, mainly computer science. And the other management members have management and
56 business experience and they mainly do strategy management to help companies have more influence
57 in the society.

58 **1.2 Progress and gain from idea two(Recruitment Information Analysis)**

59 **1.2.1 General idea**

60 1. Recruitment resource: wrote the code to get a list of directories for recruiting jobs and sort out the
61 data obtained from the official webpages.

62 2. The recruitment information contains location, job position, job description and responsibility, and
63 requirement.

64 For job location, we can see where they need talents to join and it may be an indicator for the region
65 business development. For job position, we can see which type of jobs they are seeking people to
66 join in. It is an indicator for the technology or the related business area that they want to expand. For
67 job description and responsibility of each job, we can know more details of this job and have a better
68 understanding the functionality and the value of this work to the company. For the job requirement, it
69 can give more details of the qualities or core skills that they want to find from the employees. It is an
70 indicator of the related developing areas that require these skills.

71 3. Comparison: learn about the company's development trends through vertical comparison, or
72 explore the company's characteristics by horizontal comparison with the similar type of company.

73 **1.2.2 Analysis**

74 First, we browsed the official website of 8 target companies. After reviewing their recruitment
75 information, we have obtained the following conclusions. Two of the target companies are a little
76 special, one is QxBranch there is an Uncategorized position in its recruitment. Another special
77 company is SenseTime, the content of its recruitment website is very rich. It feels that the company
78 is very large and there are many departments. So we conducted a more detailed analysis of these two
79 companies.

80 **QxBranch** For the recruitment information of the QxBranch, All the job position is in Washington
81 DC which may indicate that it's the core department. For uncategorized employee, it indicates that the
82 company also provide position for the people who has wide knowledge about the technique part while
83 not be limited to a certain scope. Generally speaking, QxBranch is an international (People&location)
84 company. It focuses on the technology development especially the building models and coding. And
85 it also keeps attention on the marketing and strategy part. It is a fast-pace company aiming to develop
86 efficiently with high quality.

	1QBit	QxBranch
Type	Privately held company	Privately held company
Industry	Computer software	Computer software
Founded	December 1, 2012	September 10, 2014
Headquarters	Vancouver, British Columbia, Canada	Washington, DC, USA
Number of employees	100 (2019)	Approx. 4+15 (2016)

87 We choose another Quantum computing software company 1QBit to compare with QxBranch.
88 Although the time of founded the two companies differs by more than a year, the size of the company
89 is quite different. The company of QxBranch is small in scale and has a single business. This
90 company is still recruiting people with ideas which indicates that it is still in the initial stage of
91 development. Considering that the company has been established for several years, we conclude that
92 its development is not very smooth and may encounter bottlenecks.

93 **SenseTime** In the recruitment website, they have social recruits, school recruits, and interns which
94 position are located in various regions. It feels that the company is very large and there are many
95 departments. The company seems developing rapidly. We look into the social recruitments in Hong
96 Kong From 2019. There are several types of job position such as developmental and test engineers,
97 project manager, researcher, and sales manager. The majority of the job types are related to the
98 technical part. We notices that Sensetime wants to recruitment talents in the field of the automatic
99 drive. There is no campus recruitment information in Hong Kong. There are few recruitment
100 information for intern. Most of the recruitment information is also about the technique. We can notice
101 that sensetime needs talents to develop technique related to the education. And this job requires solid
102 command of python and knowledge of deep learning.

103 In addition, we consulted the recruitment website of his competitors. As a competitor of Sensetime,
104 Megvii is an artificial intelligence company that specializes in image recognition and deep learning.
105 Its recruitment website is very similar to Sensetime. They have social recruits, school recruits, and
106 interns. It feels that the company is very large and there are many departments locating all over the
107 word.

108 Both Sensetime and Megvii are representative companies in the field of visual identification. From the
109 research post, we found that Megvii company mainly recruits relevant personnel for image analysis.
110 We can infer that Megvii intends to continue further development in this field.

111 **1.3 Progress and gain from idea three(Research Reports Analysis)**

112 For external researchers, there is not much information about unlisted startups that we can get access
113 to. However, research institute can always get much more information about startups and use it to do
114 research and publish a research report to provide reference for companies and investors. And a lot of
115 useful information can be mined through research reports. Thus, research report is a good way to help
116 researchers to have a better and deeper understanding of a startup. When analyzing the company's
117 development, we can carry out comparative analysis from a horizontal perspective and a vertical
118 perspective to gain a deeper understanding of the company's own development and its position in the
119 industry. As for the information collection in this part, at the beginning, we only manually extracted
120 information on the webpage, but after receiving Anthony's suggestion, we learned to use requests,
121 BeautifulSoup and webdriver in Python to crawl webpage information, which not only improved
122 the work efficiency, but also collected some information that could not be copied. Collected useful
123 information is used in the analysis of the following two aspects.

124 **1.3.1 Research Reports Analysis on Company business**

125 **1.Funding Rounds** We did data crawling about funding rounds from TianYanCha(<https://www.tianyancha.com/company/53901112>) and got the table about its funding situation. From the
126 beginning of the company’s establishment in 2014 to the present, SenseTime’s total financing amount
127 is more than 2.6 billion US dollars, and the amount is getting bigger. Last year, SenseTime got three
128 rounds of investment, amounting to 2.2 billion US dollars, which shows that the market is very
129 optimistic about the company’s development. See Table 1.
130

131 **2.Technical Comparison** We did data crawling about the core technologies information from the
132 homepages of three companies. On the whole, SenseTime has the widest coverage and a deep learning
133 platform, while MEGVII(Face++) technology has the most complete face technology among the
134 three companies. And YITU has tracking technology. See Figure 1.

135 **3.Patent Information** We got the information about patent information from TianYanCha as well
136 and calculated the cumulative number of patents for comparison among SenseTime and its competitors,
137 MEGVII and YITU. From what we’ve got, although SenseTime established late, it is developing very
138 rapidly. Especially in the past three year, the increase in the number of patents has basically caught
139 up with MEGVII. See Figure 2.

140 **1.3.2 Research Reports on Industry ranking**

141 In recent years, with the continuous growth of artificial intelligence technology, several authoritative
142 rankings have been established in China and abroad to rank and analyze startup companies in the
143 AI field. For foreign leaderboards, we choose AI 100 from CB INSIGHTS and FRVT 1:1 from
144 NIST(National Institute of Standards and Technology). For domestic rankings, we choose Artificial
145 Intelligence Future Enterprise Ranking from Internet Weekly eNet Research Institute.

146 **1.AI 100 from CB INSIGHTS** The research team of AI 100 selected the 100 startups from a pool
147 of 3K+ companies based on several factors, including patent activity, investor profile, news sentiment
148 analysis, proprietary Mosaic scores, etc.

149 Although SenseTime was established late, it was selected by CB Insights as one of the 100 most
150 promising AI companies in the world in 2017. And in the 2018 and 2019, SenseTime became a
151 member in AI 100—The Artificial Intelligence Startups Redefining Industries.

152 In the report, a total of 11 companies on the list are unicorns (private companies valued at \$1B+). And
153 SenseTime has the highest Max Valuation. Also, SenseTime is the most well-funded company. And
154 the top 2 most well-funded companies — SenseTime and Face++ — are both from China and focused
155 on facial recognition tech, with government investors and clients. For example, in November 2017,
156 SenseTime signed a strategic cooperation framework agreement with the Shanghai Government. See
157 Figure 3&4.

158 **2. FRVT 1:1 from NIST** FRVT 1:1 is from the National Institute of Standards and Technology.
159 The face recognition test set of FRVT comes from the real business scenarios of the US Department
160 of Homeland Security.The large number of photos in the test set are collected during the process
161 of immigration and criminal investigation. Thus, FRVT is closer to actual scenarios, and the test
162 scale is larger. Not only does it have millions of test data, but also the test data is not public, which
163 effectively avoids over-fitting or even cheating. Since an important business area of SenseTime and its
164 competitors is face recognition in security, the report seems more targeted and meaningful.

165 The leaderboard shows the top performing 1:1 algorithms measured on false non-match rate (FNMR)
166 across several different datasets. FNMR is the proportion of mated comparisons below a threshold
167 set to achieve the false match rate (FMR) specified. FMR is the proportion of impostor comparisons
168 at or above that threshold.

169 In FRVT 1:1, SenseTime’s competitor, YITU won the global face recognition competition, and the
170 recognition accuracy rate exceeded 99% in one millionth of a false positive. SenseTime is closely
171 followed, and there is also room for further improvement in the accuracy of face recognition. See
172 Figure 5.

173 **1.3.3 Artificial Intelligence Future Enterprise Ranking from Internet Weekly & eNet**
174 **Research Institute**

175 This report is released by "Internet Weekly" from Chinese Academy of Sciences & eNet Research
176 Institute. It is one of the most authoritative rankings in China. The final score for each company
177 consists of iBrand, iPower and iSite: iBrand includes company positioning, mission, goals, values
178 and influence. iPower includes current revenue, net profit, management, business methods and
179 accumulation. iSite includes the intrnet, underlying technology, operations and user assessment.
180 From 2017 to 2018, SenseTime and its competitors have both increased their rankings, while
181 SenseTime has maintained a leading position in computer vision. See Table 23.

182 **2 Reflection on an AI article and a finance one (essay)**

183 **2.1 Reflection on an AI article**

184 Cancer, as a self-sustaining and adaptive process that interacts with its microenvironment, continues
185 to thwart patients and clinicians despite significant progress in understanding its biological under-
186 pinnings. One of the greatest challenges remains in the accurate detection, characterization, and
187 monitoring of cancers. Fortunately, artificial intelligence (AI) promises to make great strides in the
188 qualitative interpretation of cancer imaging. The journal *Artificial intelligence in cancer imaging: Clinical challenges and applications* reviews the current state of AI as applied to medical imaging of
189 cancer and describe advances in four tumor types (lung, brain, breast, and prostate) to illustrate how
190 common clinical problems are being addressed.
191

192 After reading the journal, we learn about the advantages of radiomics with AI technology over
193 traditional radiographic imaging. The traditional imaging evaluation of tumor relies upon largely
194 qualitative features, such as tumor density, and regularity of tumor margins. In comparison, the
195 rapidly evolving field called radiomics is enabling digital decoding of radiographic images into
196 quantitative features, including descriptors of shape, size, and textural patterns. We conclude several
197 significant points:

198 1. AI methodologies have made great contribution in automatically quantifying radiographic patterns
199 in medical imaging data. Deep learning, a subset of AI, is an especially promising method that
200 automatically learns feature representations from sample images and has been shown to match and
201 even surpass human performance in task-specific applications.

202 2. The automated capabilities of AI offer the potential to enhance the qualitative expertise of clinicians,
203 including precise volumetric delineation of tumor size over time, parallel tracking of multiple lesions,
204 translation of intratumoral phenotypic nuances to genotype implications, and outcome prediction
205 through cross-referencing individual tumors to databases of potentially limitless comparable cases.

206 3. Deep learning approaches promise greater generalizability across diseases and imaging modalities,
207 robustness to noise, and reduction of errors — eventually leading to earlier interventions and
208 significant improvements in diagnosis and clinical care.

209 In addition, we acquire a detailed understanding of the clinical applications of AI in cancer imaging.
210 Firstly, consider lung cancer, a leading cause of cancer-related death among men and women globally.
211 Note the reason that the majority of patients who are diagnosed with lung cancer will die from
212 their disease can be attributed to the late stage at diagnosis. Although conventional biostatistics
213 and machine-learning approaches have been used to address many of the limitations in lung cancer
214 screening, AI has the potential to supplant such approaches to identify biomarkers that reduce imaging
215 false-positive results and more accurately differentiate between benign and cancerous nodules. AI
216 is expected to play an important role in improving the early detection and characterization of lung
217 cancer by differentiating benign from malignant nodules.

218 Secondly, think about brain tumors, perhaps more diverse than tumors of any other organ system in
219 the body. Imaging plays an important role in the initial diagnosis of brain tumors and is a routine part
220 of both initial and subsequent evaluation. The complex imaging features of brain tumors, as well as
221 the frequent genetic heterogeneity within tumor types, give rise to diagnostic dilemmas in this field.
222 Luckily, AI can improve the utility of current standard diagnostic imaging techniques by refining
223 the preoperative classification of gliomas beyond what human experts can provide. To date, most

224 research applications of AI in brain tumors have focused on addressing challenges in distinguishing
225 between histopathologic and molecular subtypes of brain tumors.

226 It is also encouraging to see AI in improving breast cancer and prostate cancer diagnosis. Advances
227 in both imaging and computers have led to a rapid rise in the potential use of AI in various tasks
228 in breast imaging, such as risk assessment, detection and response to therapy. With the application
229 of AI methods to breast image data, characteristics of tumor size, shape, and morphology can be
230 quantitatively obtained. As for prostate cancer, the most frequently diagnosed, noncutaneous male
231 malignancy in the United States, AI techniques have achieved promising results by incorporating
232 ultrasound data, specifically radiofrequency, for prostate cancer classification.

233 This medical journal presents a comprehensive illustration of clinical problems in cancer detection
234 and treatment, and how current AI technologies are attempting to address these. In brief, AI is making
235 great strides in the qualitative interpretation of cancer imaging, including volumetric delineation of
236 tumors over time, extrapolation of the tumor genotype, prediction of clinical outcome, and assessment
237 of the impact on adjacent organs. Although many studies evaluating AI applications in oncology
238 have not been vigorously validated for reproducibility and generalizability, the results do highlight
239 increasingly concerted efforts in pushing AI technology to clinical use and to impact future directions
240 in cancer care.

241 **2.2 Reflection on an finance article**

242 This essay called *The impact of Fintech on Banking* mainly tells the fintech's development as well
243 as its impact on the banking market structure, strategies of incumbents and entrants and financial
244 stability. After reading this essay, we have the understanding of the background and development of
245 fintech, different type of fintech business nowadays, the impact of fintech on banking market structure,
246 the strategy for the players, and regulations to make the financial market stable.

247 In the first place, it defines fintech as the use of innovative information and automation technology in
248 financial services. New digital technologies automate a wide range of financial activities and may
249 provide new and more cost-effective products in parts of the financial sector, ranging from lending to
250 asset management, and from portfolio advice to the payment system. There are some elements which
251 can facilitate the development of the fintech. For example, big data can be used with algorithms from
252 artificial intelligence proting from advanced computing power including cloud computing, mobile
253 storage through the cloud, and mobile hardware.

254 With the development of the digital technology, more and more fintech business emerges in financial
255 services such as lending, payment system, financial advising and insurance. And then the author lists
256 some specific examples of fintech business, such as P2P, mobile based payment, and "Robo-advisors".
257 From the examples, we can learn that compared to traditional entities, ntech business has the potential
258 to lower the cost of intermediation, broaden the access to the capital, and provide the advice more
259 reasonably based on the machine learning tools and big data.

260 Fintech competitors are encroaching on the traditional business of banks, despite the fact that banks
261 are adapting to the digital world. Banks have traditionally focused on products, while new entrants
262 are more focused on customers. Fintech competitors are putting pressure on the traditional business
263 model of banks. We can learn that there are two competitive advantages of retail banks. One is that
264 banks can borrow cheaply with their access to cheap deposits and explicit or implicit insurance by
265 the government. Another advantage is that they enjoy privileged access to a stable customer base that
266 can be sold a range of products. The presence of deposit insurance may facilitate the entry of new
267 competitors as banks, but in this case the entrants will have to pay the cost of the banking license
268 and compliance expenditures. Then, the author lists the mortgage market in US as an example to
269 demonstrate that entry in the intermediate business with new technologies will depend very much on
270 how regulation and government guarantees are applied. The actual impact for the banks may come
271 from the full-scale entry of top digital internet companies such as Amazon, Apple or Google. Their
272 potential is very large to enter the market, because they have access to massive amounts of customer
273 data and they may control the interface with them when it comes to nancial services. They are also
274 growing quickly in payment services.

275 After Analyzing the impact of fintech on banking market structure, the author then discusses how to
276 build strategies for the new entrants and the incumbents. In summary, the incumbents may partner
277 with the new entrants, buy them up partially or totally, or decide to ght them. The details of each

278 segment of the market will matter for the decision as well as the extent of legacy technologies in
279 each institution. Indeed, the response of institutions is likely to be heterogeneous according to their
280 specificity. The new entrants may decide to do so at a small scale and grow from there or, in particular,
281 the Internet giants may attempt large-scale entry by controlling the interface with customers.

282 In terms of “RegTech”, it’s of great significance to have regulation to keep a level playing field between
283 incumbents and new entrants so that innovation is promoted, and financial stability is preserved.
284 Regulation of fintech should also pay attention to the data privacy and cybersecurity.

285 Generally speaking, fintech has a large and potentially disruptive capability. However, regulation
286 should rise to control the challenges, in order for the new technology to deliver the benefits for
287 consumers and firms without endangering the financial stability. As students majoring in Financial
288 Mathematics, we should keep an eye on what is happening in the fintech area and what is the impact
289 on the traditional financial services. In addition, we also need to keep learning the technique such as
290 different algorithms and utilization of the big data to apply it to the finance area, as financial services
291 are developing themselves by emphasizing on modern technique nowadays.

292 **3 Synthesis and suggestions for further study**

293 1. During research on the management board background, there are some difficulties to get the accurate
294 management information because many detail information are secret and only several important
295 management board are disclosed by these public AI companies, which means that it is useful to using
296 crawling websites to more information, not just from official websites, engine search (Google, Baidu,
297 Wikipedia) and LinkedIn, not also from other social network news website blog, etc. to get more
298 detail and various information. Also, for these websites that are difficult to crawl and get, we need to
299 make more research and improve our crawling technique.

300 2. For the analysis in the recruitment part, we can keep using the technique of auto open and web
301 crawler to get the latest recruitment information. In this way, we can do the vertical comparison about
302 the company, in order to have a picture of their strategies and development direction. In order to get
303 the core information efficiently, we can learn how to get the core words or words which appear more
304 frequently in the recruitment information.

305 3. From the website, we can only see the current recruitment situation, the historical data is unavailable
306 to obtain, so we can not do vertical comparison of the company. Since the recruitment information
307 may frequently change, we plan to use the ‘Distill Web Monitor’ web monitoring extension to
308 automatically check if the web page information has changed.

309 4. During research reports analysis, we collect reports from several important websites, and then
310 present useful information in a logical way. When coming across not being able to copy information,
311 we use web crawler technology. In competitor analysis, we use the chart form as much as possible to
312 visually show the similarities and differences among companies. For further study, we hope to use
313 social network analysis method to learn more relationship in-depth, and make information processing
314 more automated.

315 5. Since it is difficult to get access to a large amount of data of unlisted startups, in the future, we
316 can try to establish a technology for crawling the entire search network, crawling the content from
317 webpages by locking keywords, and adding sentiment analysis to extract the most relevant and
318 useful information, as well as identify false information, to obtain fully effective and comprehensive
319 information to do research on startups.

320 **4 Note individual contribution**

321 This section details the main work and contributions of each of our team members in this course
322 project in this semester.

323 The table is mainly divided into three parts:

324 The first part is our division of labor in completing this report, there are four parts in this paper, we
325 have divided it into sub-parts and everyone not only contributes one part but also two to three parts
326 and we often talk about our report and help each other.

Contribution		HOU Jie (Team leader)	QIAN Jing	SONG Chu	KE Chenji	YANG Yu
Report	Progress and learning	✓	✓	✓		
	Reflection on articles				✓	✓
	Synthesis and suggestions	✓	✓	✓	✓	✓
	Note individual contribution				✓	
Presentation	Management	✓				
	Recruitment		✓			✓
	Research Reports			✓	✓	
Integration work		✓				

327 The second part is our division of labor cooperation in our daily research project-Track and monitor a
328 group of private AI companies.We divided us into three sub-groups to achieve three different ideas
329 but we communicate crawling technique and findings from research with others usually.

330 The third part is the integration work, which mainly doing by team leader. And our team members
331 are active and willing to help each other, learn from each other. We are unite in solving difficulties
332 and gain a lot for the project and the course.

333 **References**

334 This is our reference, the AI paper and the finance paper in part two.

335 [1] Bi, Wenya Linda. & Hosny, Ahmed. (2019) Artificial intelligence in cancer imaging: Clinical
336 challenges and applications *A Cancer Journal for Clinicians* Vol.69(2):127-157.

337 [2] Vives, Xavier. (2017) The impact of FinTech on banking *European Economy* 2:97-105.

338 **Appendix**

339 This is appendix for reference.

Table 1: Funding rounds of Sensetime

Announced Date	Transaction Name	Money Raised	Lead Investors
Sep 10, 2018	Series D	\$1B	SBCVC (SB China Capital)
May 31, 2018	Series C+	\$620M	Fidelity International, HOPU Investment Management Company, Silver Lake Partners, Tiger Global Management
Apr 9, 2018	Series C	\$600M	Alibaba Group, Temasek, Suning Cloud Business Group
Dec 26, 2017	Corporate Round	—	Green Pine Capital Partners
Nov 28, 2017	Corporate Round	¥1.5B	Alibaba Group
Nov 15, 2017	Corporate Round	—	Qualcomm Ventures
Jul 11, 2017	Series B+	\$290M	CICC, TCL Capital, etc.
Dec 14, 2016	Series B	\$120M	CDH Investment, Wanda Group, StarVC, IDG Capital
Apr 26, 2016	Series A	\$10M	StarVC
Nov 7, 2014	Angel Round	—	IDG Capital

Table 2: 2017 Artificial Intelligence Future Enterprise Ranking

2017 Artificial Intelligence Future Enterprise Ranking

Ranking	Enterprise	Industry
20	Sensetime	Computer vision and deep learning
27	MEGVII (Face ++)	Machine vision
44	YITU	Computer vision and deep learning
2017 Internet Weekly & eNet Research Institute		

Table 3: 2018 Artificial Intelligence Future Enterprise Ranking

2018 Artificial Intelligence Future Enterprise Ranking

Ranking	Enterprise	Industry
11	Sensetime	Artificial intelligence visual deep learning platform
16	MEGVII (Face ++)	Artificial intelligence products and industry solutions
32	YITU	Computer vision technology
2018 Internet Weekly & eNet Research Institute		



Figure 1: Core technologies comparisons among Sensetime and its competitors

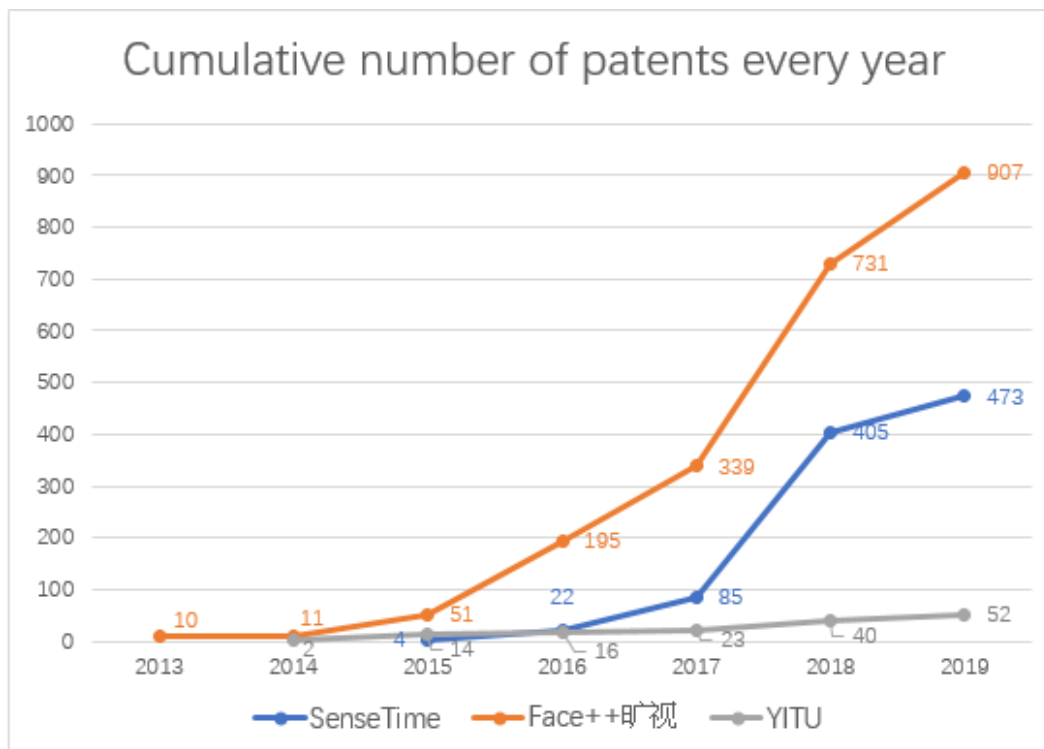


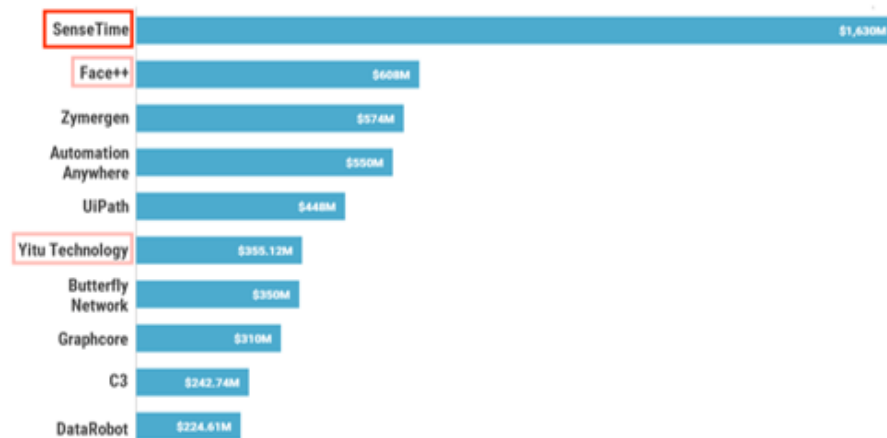
Figure 2: Cumulative number of patents of three companies every year

Company	Focus Area	Country	Max Valuation (\$M)
SenseTime	Security	China	\$4,500
UiPath	Other: RPA	United States	\$3,000
Automation Anywhere	Other: RPA	United States	\$2,600
YITU Technology	Security	China	\$2,365
Graphcore	Data Centers	United Kingdom	\$1,700
C3	IIoT	United States	\$1,564
Butterfly Network	Imaging & Diagnostics	United States	\$1,250
4Paradigm	Anti-Fraud	China	\$1,200
Pony.ai	Autonomous Vehicles	United States	\$1,000
Face++	Facial Recognition	China	\$1,000
Momenta	Perception	China	\$1,000

Figure 3: The max valuation of Sensetime and its competitors

2019 AI 100: Most well-funded companies

Based on total equity funding



Source: cbinsights.com

CBINSIGHTS

Figure 4: 2019 AI 100: Most well-funded companies

#	Developer	VISA Photos FNMR@ FMR \leq 0.000001	VISA Photos FNMR@ FMR \leq 0.0001	MUGSHOT Photos FNMR@ FMR \leq 0.0001	WILD Photos FNMR@ FMR \leq 0.00001	CHILD EXP Photos FNMR@ FMR \leq 0.01	Submission Date
1	yitu-002	0.004 ¹	0.001 ¹	0.013 ⁷	0.052 ¹³		2018_10_19
2	yitu-001	0.007 ²	0.003 ⁷	0.013 ⁸	0.058 ²⁶	0.579 ¹³	2018_06_12
3	sensetime-001	0.009 ³	0.003 ⁶	0.013 ¹¹	1.000 ⁷⁶		2018_10_19
4	sensetime-002	0.010 ⁴	0.003 ¹⁰	0.015 ²⁹	1.000 ⁷⁷		2018_10_19
5	siat-002	0.013 ⁵	0.004 ¹⁵	0.014 ¹⁵	0.055 ²⁰	0.428 ³	2018_06_13
6	ntechlab-004	0.013 ⁶	0.003 ⁴	0.013 ¹²	0.046 ⁶	0.420 ²	2018_06_14
7	ntechlab-005	0.014 ⁷	0.002 ²	0.013 ¹⁰	0.050 ¹⁰		2018_10_19
8	megvii-002	0.014 ⁸	0.004 ¹²	0.030 ⁶³	0.071 ³⁵		2018_10_19
9	vocord-005	0.016 ⁹	0.003 ³	0.015 ³²	0.048 ⁹		2018_10_18
10	everai-001	0.016 ¹⁰	0.004 ¹⁴	0.013 ²	0.031 ²		2018_10_30

Figure 5: FRVT 1:1 from NIST