# Ultrapower ChinAI Company Profile

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# The Changes and Consistencies of Ultrapower

In November 2018, the Renren, the Chinese version of Facebook, announced the sale of assets related to Renren's social platform business, bringing the social platform, which had, for a time, been a hit with college students in China, to an official end. Renren founder Chen Yizhou discussed a few lessons learned in an interview with the media -- one of which was: "Transformation is more difficult than entrepreneurship, and the transformation of listed companies is more difficult than getting to heaven."

In the past two years, "raising a glass to celebrate" and "holding one's head while crying" have become the two kinds of psychological states for private enterprises. Recently, at Ultrapower's 2018 summary meeting, Ultrapower Software Chairman Wang Ning expressed his agreement with and understanding of Chen Yizhou. "When the industry as a whole is in decline, companies have to transform. And transformation for a private enterprise, especially a private listed enterprises, which faces the pressure of financial results, will be very difficult." Wang Ning told Leiphone's internal core media.

According to official materials of Ultrapower Software, it was founded in 1998 and was restructured into Beijing Ultrapower Software Co., Ltd., one of the first batch listed on the

Shenzhen Stock Exchange GEM (300002). The company currently employs more than 4000 people, is one of the "key software enterprises in the national planning layout", a "national-level enterprise technology center," and has more than 40 sub-branches, subsidiaries, including 19 national high-tech enterprises. The company has CMMI L5, grade-two ITSS, system integration level one, level-two information security services, level-two security, and other top qualifications.

The company takes science and technology R&D as its pulling force, to create core competitiveness, with more than 1500 pieces of software copyrights, and more than 600 patent authorizations.

From 1998 to 2018, Ultrapower has been growing for a full 20 years. Regarding past development, a Ultrapower Software leader said, quite emotionally, "Ultrapower Software was founded in 1998, established more than 20 years ago, and has experienced two or three economic cycles."

Ultrapower Software is a B-To-B company, with a low-key business style, unknown to the C-side ordinary users. When discussing its achievements in the past 20 years, it is necessary to mention a product, China Mobile's Fetion (飞信) application. As once China Mobile Fetion's operation and maintenance support outsourcing service providers, Ultrapower Software's rise to fame came from Fetion, and Ultrapower Software Chairman Wang Ning does not deny this past glory and regret. Of course, it's more him reflecting on the situation.

After Feition, Ultrapower Software found a "new battlefield." Stating in 2016, Ultrapower began to gradually evolve toward new areas such as AI and the Internet of Things. Wang Ning said, *"At the end of the previous era, we were facing a new system, new markets, and new methods of play, and a large number of enterprises found it really difficult to adapt. Transformation is a very macro concept, and it is worth exploring more deeply which are the aspects to change according to the "genes" of a business. Also due to reasons related to technology, market, different eras (when entrepreneurs were born), change to private enterprises brings great pressure."* Ultrapower chose to embrace change, what stayed the same was the dedication to and belief in technological innovation.

## AI and Big Data Track

Ultrapower Software focused on natural language processing and the R&D and applications of big data technology, has become a national place of strategic importance for technological innovation. In the three directions of basic research, platform construction, industry application, it has gained core competitiveness and market influence. At present, it has built up the three major product directions of semantic cognition, big data processing, artificial intelligence applications, and its customers are widely distributed in the fields of public (services), security, law, finance and many others.

In 2017, it established a joint AI laboratory with Beijing Normal University (BNU), and Xu Jialu, a well-known linguist and former vice chairman of the Standing Committee of the National

People's Congress, became the director of the joint lab's academic committee. In May 2018, the lab joined with Renmin University's DBIIR lab to build and officially release Chinese language vector resources, including dozens of language materials (Baidu Encyclopedia, Wikipedia, People's Daily, Zhihu, Weibo, Literature, Finance, Ancient Chinese, etc.) organized into training words, phrases, ngram vectors, which covered a variety of training settings and provided CA8 evaluation data sets and evaluation methods.

In August 2018, Ultrapower's AI research institute officially established a Deep Learning Laboratory, focused on the research of deep learning algorithms, optimization, landing, and focusing on research integrating deep learning and NLP. Since its establishment 4 months ago, the laboratory has filed 28 patents in the fields of deep learning, semantic matching and text classification.

In October 2018, at the 17th China Computational Linguistics Congress (CCL 2018) and the 6th International Symposium on Natural Language Processing based on Naturally Annotated Big Data (NLP-NABD 2018). The Ultrapower-BNU joint lab's "Revisiting correlations between intrinsic and extrinsic evaluations of word embeddings" article won the NLP-NABD 2018 Best Paper Award.

In the domain of AI products, it has introduced the ***Ruida Control SaaS platform***, Chinese information (depth) processing open innovation platform, ***Taiyue semantic factory,*** and **intelligent brain 2.0 (智脑2.0)**. Among them, "Ruida control" V1.0 SaaS platform, based on Ultrapower Software's leading semantic cognition, big data, machine deep learning technology, combined with rich experience in the financial industry, to help financial institutions fully integrate, use both (Ultrapower's) internal and open data from the Internet to create a new type of financial risk control system, products can be directly applied to risk control, companies, Internet finance, distribution channels and customer business units such as small and medium enterprises.

The Taiyue semantic factory, in terms of form, is similar to BAT, but the difference is that the open NLP technology content may be far more than that of BAT. In one year Ultrapower Software's open NLP API services and NLP application API services cover nearly 20 categories of hundreds of services, At the same time, it will also open NLP data resources and a large number of NLP training courses, and these data resources will cover more than 20 million Chinese word data sets in 15-plus industries, to help companies solve the internal NLP technical capabilities and meet their difficult challenges, with the biggest potential to help companies by minimizing costs in the NLP domain in terms of time costs for personnel as well as management costs.

In November 2018, Ultrapower put out its "Intelligent Brain 2.0" for the public security industry's big data and artificial intelligence integrated application products based on EB-level full data on the order of seconds (time measure). "Intelligent Brain 2.0" is based on artificial intelligence-natural language processing (AI-NLP) at the core, with brain-like intelligence, speed calculation, physical 360° hologram and data sharing as technical support, the problem of

cross-police of police system, information sharing and resource pooling in cross-regional problems is solved efficiently, and clues for investigation are explored. This can help determine the direction of reconnaissance and other aspects, and help public security customers to create a "wise new police" model, and build a public security big data "Skynet."

Leiphone learned that Ultrapower's AI business is particularly eye-catching in the public security industry:

※ On January 2, 2018, the criminal investigation division of the Public Security Bureau of Guangxi Zhuang Autonomous Region and Ultrapower reached a strategic agreement on cooperation in the field of AI and big data. The Guangxi Public Security Bureau, in conjunction with Ultrapower, takes artificial intelligence and big data technology as its starting point and explores the application of innovative big data policing to jointly deepen the strategic cooperation between police and companies, give full play to their respective advantages, and establish a joint mechanism to prevent and combat Internet crimes, and jointly develop a new model of cooperation between police and companies in the field of public security research and the application of scientific and technological innovation achievements.

※ In July 2018, cooperation with Sichuan Garzê Tibetan Autonomous Prefecture Public Security Bureau to provide intelligent reference points for public security research based on Ultrapower's AI technology.

Note: I excerpted the rest of the four cases (all cooperation agreements signed in first seven months of 2018) which basically involve the same types of cooperation but in four different areas: 1) cooperation with public security bureau of Guiyang (capital of Guizhou Province); 2) cooperation with public security bureau of Shijiazhuang, capital of Hebei Province; 3) cooperation with Public Security Bureau of Taiyuan -- capital of Shanxi Province; 4) a division of the Anhui province-level Public Security Bureau

## Internet of Things and Communication Track

Ultrapower Software uses its originally-designed and advanced technology to embed an Internet of Things chip into communication cables, to create a set of wireless communications, Internet of Things sensing, precision location (services), security monitoring, friend-or-foe recognition and other functions. The product has applied for more than 130 patents, including 14 international patents. It has been included in the city of Beijing's reserve of twenty major disruptive technologies. At present, various industry solutions such as "Smart Wall Intrusion Detection System", "Urban Integrated Pipeline Security Communication Integrated System" and "Nu-WiFi Wireless Communication System" based on smart cable technology are used in the smart perimeter, smart pipelines, smart nuclear power, smart border defense and other scenarios.

In the field of precision positioning, we have developed innovative tools that can be positioned at at the highly-precise centerimer-scale and can be placed in a room with no dead spots for important people and objects. Technical breakthroughs: 1. Positioning based on TOF/TDOA; 2. Using 3D positioning calculation and 3D rendering.

"Smart Wall Intrusion Detection System" uses microwave array technology to perceive intrusions from living things, and judges the characteristics of intrusion targets through front-end detection cable feedback waveform data, and introduces artificial intelligence neural network and big data analysis means to form intelligent analysis AI algorithm, The artificial intelligence neural network and big data analysis methods are introduced to form an intelligent analysis AI algorithm, which forms an active detection and early warning system that is different from the traditional perimeter (security systems)

The smart wall intrusion detection system has the following characteristics:

※ Distributed array microwave field, active stereo detection, avoid interference stacking (wall surface)

※ Two-line deployment is 3 meters away from the wall and up to 2.5 meters from the ground.

※ Intrusion accurate positioning, maximum positioning accuracy 2~5 meters

※ friend-foe identification (unique)

※ Logical zone, automatic arming prevention (unique)

※ Early warning alarm rating (new)

※ Multiple waveform judgment zero omission (lift)

※ AI intelligent filtering low false positives (new)

※ Good with topography

※ Strong vegetation and weather adaptability (lift)

※ System free debugging (new)

※ System scenario applicability can be improved by sample update (new)

Based on the above characteristics, the "Smart Wall Intrusion Detection System" is widely used in energy, military armed police, airport prisons, municipal cultural preservation and other fields.

## ICT Operations Management Track

In the traditional dominant business line of Ultrapower, the ICT operation management system, Ultrapower Software introduced natural language processing, machine learning, integrated communications and other cutting-edge technologies, forming a new full stack of intelligent operation management platform, the realization of the leap in ICT operation management from automation to intelligentization. Ultrapower has long served large and medium-sized enterprises and government agencies in the fields of telecommunications, finance, energy, transportation and other fields, has a deep understanding of ICT operation and management, excellent development capabilities and experience in practice. According to CCID's "China IT Service Management Market Research Annual Report," Ultrapower has ranked at the top in the IT service management market for 8 consecutive years.

Veterans can also be "sentimental", "Ultrapower wants to be a respectable company, not just a profitable company," Wang Ning told Leiphone and other media.

# From other articles - interesting info

Used as a success case for AWS integration
https://aws.amazon.com/cn/partners/success/ultrapower/

A wholly-owned subsidiary of Ultrapower (Anhui Taiyue Xiangsheng Software Co., Ltd.) was awarded 30 million RMB in government subsidy funds by the Anhui Province's Department of Economics and Information Technology, per a public notice (《安徽省2018年拟支持中国声谷建设若干政策项目（第一批）公示》)
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