# China’s growing drone industry drives urgent need for skilled swarm planners



As students across China sit for the national college entrance exam, a crucial milestone in determining their educational futures, the spotlight is increasingly shifting toward an emerging career path in the high-tech sector: drone swarm planning. This profession is at the forefront of the country's rapidly evolving drone industry, exemplified by a recent show featuring an impressive 4,000 drones performing synchronized aerial displays. These performances not only astound audiences but also highlight the unique skills of those behind the scenes—drone swarm planners who turn complex algorithms into breathtaking visual spectacles.

In an era where a single pilot can manage an entire fleet of drones, the role of the drone swarm planner has become pivotal. As Li Yang, Director of Swarm Technology for a prominent drone show, explains, the intricacies of deploying drones in unison rely heavily on software and advanced programming. "Flying a single drone requires knowledge of its mechanics and manual operation using a controller. However, in a swarm, everything is planned using software—we map out each drone's flight path, altitude, speed, and all other details," he states. This technological craftsmanship transforms thousands of drones into coordinated dancers, creating stunning visual narratives in the sky.

The rapid growth of China's drone industry is underscored by the Civil Aviation Authority's projections that the low-altitude economy could soar to approximately 3.5 trillion yuan (around 482 billion US dollars) by 2035. However, a pressing issue looms on the horizon: a substantial shortage of qualified drone operators. Recent reports indicate that China may need as many as one million drone pilots in the coming years, driving universities and colleges to enhance their training programs and fill this crucial gap in talent.

Institutions like Chengdu Aeronautic Polytechnic are responding to the call with specialised programmes tailored to the needs of the drone industry. Vice Dean Wang Siyuan notes that to become a proficient drone pilot, students must acquire comprehensive knowledge of the entire drone system, including its construction and operational capabilities. This initiative is part of a broader trend, with six prestigious universities planning new courses specifically focused on low-altitude technology and engineering. These curricula aim to bridge the gap between academic qualifications and industry demands, offering students both theoretical knowledge and practical skills.

The demand for drone professionals is not limited to entertainment; applications are proliferating across various sectors, including urban logistics, emergency response, and delivery services. Liu Zhihao, a drone swarm planner, emphasises the meticulous nature of designing drone performances, stating, "When we design effects, like waves rolling or a head tilting as the sun rises, each motion is carefully animated." His insights reflect a broader sentiment within the industry—while entertainment dominates the current landscape, the potential for drones in logistics and disaster relief is vast and untapped.

In cities like Guangzhou, drones are redefining urban operations, from delivering packages to busy skyscrapers to conducting aerial inspections of infrastructure. The local government plans to bolster its low-altitude economy, aiming for a valuation of 150 billion yuan (approximately 20.66 billion dollars) by 2027. This ambition further illustrates the urgency for skilled professionals capable of navigating the complexities of this booming sector.

As China continues to embrace the digital revolution, new high-skill careers are blossoming, including drone swarm flight planners and electronic circuit designers. The human resources ministry has already recognised 42 new job types to meet the industry's evolving needs. With the drone market projected to exceed 200 billion yuan by 2025, the future of work within this sphere appears bright yet demanding, emphasising the need for continuous professional development.

Ultimately, students in this field are not just pursuing jobs; they are key players in steering the future of technology and services in a world that seems to elevate drone capabilities daily. "Drones are becoming integral to over 20 sectors, like delivery and disaster relief," asserts a student from Chengdu Aeronautic Polytechnic, reflecting the passion driving the next generation. In a transforming landscape where drones are set to become ever more crucial, these emerging professionals are charting a course that will redefine how industries operate from the ground up.

### 📌 Reference Map:

* Paragraph 1 – [[1]](https://news.cgtn.com/news/2025-06-07/VHJhbnNjcmlwdDg0ODIx/index.html), [[2]](https://www.globaltimes.cn/page/202503/1330148.shtml)
* Paragraph 2 – [[1]](https://news.cgtn.com/news/2025-06-07/VHJhbnNjcmlwdDg0ODIx/index.html), [[3]](https://www.globaltimes.cn/page/202411/1323842.shtml), [[4]](https://www.chinadaily.com.cn/a/202503/28/WS67e60d5ca3101d4e4dc2b673.html)
* Paragraph 3 – [[2]](https://www.globaltimes.cn/page/202503/1330148.shtml), [[5]](https://global.chinadaily.com.cn/a/202505/09/WS681dc06ea310a04af22be6be.html)
* Paragraph 4 – [[3]](https://www.globaltimes.cn/page/202411/1323842.shtml), [[6]](https://www.chinadaily.com.cn/a/202407/19/WS6699d5e1a31095c51c50eeca.html)
* Paragraph 5 – [[4]](https://www.chinadaily.com.cn/a/202503/28/WS67e60d5ca3101d4e4dc2b673.html), [[2]](https://www.globaltimes.cn/page/202503/1330148.shtml)
* Paragraph 6 – [[1]](https://news.cgtn.com/news/2025-06-07/VHJhbnNjcmlwdDg0ODIx/index.html), [[5]](https://global.chinadaily.com.cn/a/202505/09/WS681dc06ea310a04af22be6be.html)

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## Bibliography

1. <https://news.cgtn.com/news/2025-06-07/VHJhbnNjcmlwdDg0ODIx/index.html> - Please view link - unable to able to access data
2. <https://www.globaltimes.cn/page/202503/1330148.shtml> - Chinese universities are introducing low-altitude economy-related majors to meet the growing demand for skilled professionals in the drone industry. Six top universities have applied to add programs in low-altitude technology and engineering, aiming to cultivate talent for the rapidly developing civil aviation sector. These programs focus on areas such as low-altitude digital detection, certification, and flight services, combining academic qualifications with professional certifications to ensure students are well-prepared for the industry.
3. <https://www.globaltimes.cn/page/202411/1323842.shtml> - China's booming low-altitude economy has led to a surge in demand for drone pilots. With over 17,000 drone-operating enterprises and more than 2 million registered drones nationwide, the need for skilled drone operators is increasing. The domestic civil drone market is projected to exceed 200 billion yuan by 2025, highlighting the immense potential of the low-altitude economy. This growth has resulted in new job opportunities, including drone assembly engineers, maintenance technicians, and pilots.
4. <https://www.chinadaily.com.cn/a/202503/28/WS67e60d5ca3101d4e4dc2b673.html> - In Guangzhou, Guangdong province, drones are being used for various applications, including delivering packages to skyscrapers, conducting aerial city tours, and inspecting road conditions. The Guangzhou city government has released a plan aiming for its low-altitude economy to reach a value of 150 billion yuan ($20.66 billion) by 2027. Schools and training centers are being established across the country to meet the professional skills needed for this growing industry.
5. <https://global.chinadaily.com.cn/a/202505/09/WS681dc06ea310a04af22be6be.html> - China's digital boom is giving rise to new high-skill careers, including drone swarm flight planners and electronic circuit designers. The human resources authorities have unveiled a list of newly recognized professions, adding 42 new job types to its roster. This expansion reflects the rapid development of the digital economy and the need for specialized professionals in emerging fields.
6. <https://www.chinadaily.com.cn/a/202407/19/WS6699d5e1a31095c51c50eeca.html> - In Guangzhou, an unmanned aerial vehicle (UAV) delivered four college admission letters issued by the South China University of Technology to students. The drone trip took about 30 minutes, covering 25 km, marking a new application of UAVs in China. Guangzhou Post, the drone operator, has been delivering college admission letters for over 40 years, handling about 550,000 letters annually.
7. <https://time.com/3914087/china-drones-cheating-exams/> - Chinese education authorities have deployed drones over testing centers to curb cheating on the National College Entrance Exams. The drones scan for signals potentially being sent to devices that students may have sneaked into the test. This measure aims to prevent cheating methods such as selling answers, hiring surrogate test-takers, and using wireless equipment during the exam.