

Questions emerge over top Chinese science prize

Award-winning computer-science project is under fire, rekindling criticism of China's research system.

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Zhang Yaoxue (middle) receiving China's National Natural Science Award on 9 January in Beijing.

A controversy has erupted over China's leading science prize, fuelling criticism of the country's research-evaluation system — and sucking in an unassuming Canadian software developer.

Computer scientist Zhang Yaoxue was awarded the first-class prize of China's elite National Natural Science Award on 9 January for innovations in a type of network computing that enables users to access operating systems or software residing on a different computer than on the user's device.

A video presentation linked to from his Tsinghua University homepage shows a user flipping back and forth between Unix, Windows 7, Windows 8, Ubuntu and other operating systems all running on a remote server.

The first-class prize, which was presented at a ceremony in Beijing by Chinese President Xi Jinping, is deemed so important that the country would rather not award it — as it did in three of the past five years — than give it to someone undeserving. The prize awarded last year, for breakthroughs in iron-based superconductors, ended a three-year drought.

But Zhang's prize came under fire when critics on Chinese social media alleged that his work was not as innovative as was claimed. The discontent reached boiling point on 2 February, when a blogpost on GitHub, an online repository on which software developers can manage their source codes, alleged that Zhang copied his project's source code from software developer Iordan Iordanov, a Bulgarian-born Canadian based in York, Canada.

Iordanov, who had never heard of Zhang before the GitHub posts, says that Zhang's video "shows one of my remote-desktop applications connecting to various operating systems". In the GitHub blog, Iordanov writes, "It is a great honor my project has won such a prestigious prize [sic] regardless of the circumstances."

He told *Nature* that he has since had "lots of contact from various Chinese news organizations". Many of the commenters on the GitHub blog have urged him to complain to the Chinese government or to Zhang himself. Iordanov made the source code freely available under the General Public License agreement, which allows others to use it as long as the resulting work does not claim copyright. "It is perfectly alright for him to use code developed by others," says Iordanov.

But that leaves open the question of what Zhang contributed to earn his award.

Debate in the open

The Chinese government now acknowledges the allegations. News stories and social-media commentary about the prize were previously blocked from access by readers in the country. But on 3 February, the English-language version of the *Global Times*, one of China's official news outlets, published [a news story that repeated the allegations](#), with the headline 'Top research project accused of plagiarism'.

The story said that a post on Sina Weibo — a Chinese microblogging platform similar to Twitter — from Zhang's laboratory at Central South University in Changsha had stated that the team used open-source code, but that they had followed General Public License rules. But the video presenting his work, which includes some exact wording from Iordanov's source code, states that intellectual property for the technology belongs to Central South University and Tsinghua University transparent computing laboratory.

Zhang did not respond to queries from *Nature's* news team about his contribution. Two computer scientists in China told *Nature* that they supported Zhang's award, but they did not want to be named or give details of what they considered innovative in his work.

However, Xiaodong Zhang, a computer scientist at Ohio State University in Columbus, says that while he cannot judge whether Zhang Yaoxue deserved the award, he does question claims made by the education ministry, where Zhang Yaoxue used to work, in recommending him for the award. For example, the ministry claims that his research made a "fundamental contribution to the von Neumann model", a reference to the late Hungarian-American mathematician John von Neumann. Xiaodong Zhang says that transparent computing is only remotely related to principles laid out by von Neumann — which were so fundamental that "any computing devices we are using today, from calculators and laptops to giant supercomputers, are all in the scope of von Neumann model" he says.

Pointed criticism

The escalated tensions over the award come at an awkward time for the Chinese government. It has been criticized for years for poor and non-transparent evaluation when handing out large grants, awards and job posts. The latest controversy broke out just as the China Computer Federation released a statement, rare for a Chinese scientific society in its pointed criticism, demanding that the government leave the selection of scientific awards to scientists.

However, one senior government official who is familiar with the award-selection process, but does not want to be named, says that the process is rigorous and based on input from scientists. Applications must be recommended by the Ministry of Education, the Chinese Academy of Sciences, or a group of established academicians, and then pass through five stages of review. These include domestic academic peer review, a presentation in front of a ten-person panel of experts (only three candidates for first prize, including Zhang, made it past that stage), and peer review by international specialists.

The candidates then get on-site visits and finally, a committee of some 40 experts in different fields review all of the reports and hold a final vote. Only Zhang's team got the necessary two-thirds of the vote to win.

The submissions are also publicly released at three points, the senior official adds, saying that the selection is "more public than many prizes including the Nobel Prize".

Xiaodong Zhang says that the process might be rigorous, but he questions how public it is in practice. Although he is a board member of the China Computer Federation and a coordinator of last year's China National Computer Congress, he says that he did not hear about the award until he saw it being awarded on CCTV, the national television broadcast station.

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