

# CONNECTION

The Official Newsletter of Zhejiang University

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*A Year in Review*





Showcasing the most interesting and important stories from the ZJU community  
@Zhejiang University 2018

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YEAR IN REVIEW

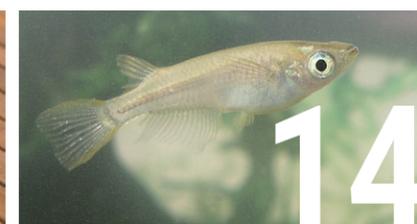
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The campus is 125 km west of Shanghai and covers a land area of 80 hectares.

Credit: YE Zhiguo

## ZJU Inaugurates International Campus

On October 21, 2017, ZJU's International Campus in the city of Haining was officially put into use.

The campus adopts a "1+X" model, where ZJU cooperates with several world-leading partner universities in faculty recruitment, student admissions, curriculum design, etc.

"The construction of International Campus is one of our major steps towards serving national and local economic development, promoting institutional capacity and accelerating the construction of a world-class university with Chinese characteristics in a new era," said Professor SONG Yonghua, executive vice president of ZJU and dean of the International Campus.

As core components of the new campus, two joint institutes (the ZJU-UoE Institute and the ZJU-UIUC Institute) will introduce the curricula of the University of Edinburgh and the University of Illinois at Urbana-Champaign respectively. Their teaching

staff consists of faculty members from UoE, UIUC, ZJU as well as newly recruited high-caliber academics. International students will account for 30% of the total enrollment. Students will finish their undergraduate program in China, and upon completion, they will obtain dual degrees from both ZJU and the partner universities.

Currently, the International Campus offers seven programs, including Biomedical Sciences, Mechanical Engineering, China Study, as well as Innovation, Entrepreneurship & Global Leadership.

***"Collaboration across cultures will strongly accelerate the creative process of students and turn them into innovative talent able to serve society and tackle global challenges in the future."***

Philip T. Krein, fellow of U.S. National Academy of Engineering & executive dean of the ZJU-UIUC Institute

For more details, please visit: [www.intl.zju.edu.cn](http://www.intl.zju.edu.cn)

### September

#### VP attends Chinese Entrepreneurs Convention

A ZJU delegation led by Vice President LUO Weidong attended the 14th World Chinese Entrepreneurs Convention on September 15-18 in Yangon, Myanmar. The theme of the convention was "An Opening Economy in Myanmar, A New Epoch in History". During a keynote speech at the Belt & Road Initiative Forum, Professor LUO said: "ZJU is eager to provide a service platform for various circles so as to achieve a win-win situation via marketization and build a new path for cooperation and development." Under the new economic structure of the Association of Southeast Asian Nations and the "Belt & Road" Initiative, the convention serves as a platform for collecting new business ideas and exchanging views among Chinese entrepreneurs.

#### School of Management accredited by CEEMAN

ZJU's School of Management has become the first CEEMAN member in China. At the 25th CEEMAN Annual Conference on September 21, the School was awarded International Quality Accreditation for its superb performances in key indicators. So far, the School has obtained four international accreditations, including AACSB, AMBA, and EQUIS. CEEMAN is an international management development association established in

1993 with the aim of accelerating the growth in quality of management development in central and eastern Europe.

#### ZJU climbs in THE subject rankings

ZJU climbed several spots in two new subject rankings released by Time Higher Education on October 17, now ranking 45th internationally in Computer Science and 50th in Engineering & Technology. The newest Computer Science ranking brings ZJU up from the 50th slot in 2016. For Engineering & Technology, this is the first time that ZJU has appeared on the global top 50 list. In addition, ZJU also appears on Arts & Humanities and Business & Economics rankings (#101-125). The improved results can be considered as a recognition of university-wide commitment to teaching and research excellence as well as global engagement. Overall, The ranking shows that China's higher education rise is not just limited to science and technology subjects.

#### ZJU 21st in QS Asia University Rankings

ZJU has moved up three spots to 21st in QS Asia University Rankings 2018, following Tsinghua (#6), Fudan (#7), and Peking (#9). ZJU ranks 4th in China, surpassing Shanghai Jiao Tong University, which remains in the same place (#22) as last year. A total of 23 Chinese universities are listed in the top 100. ZJU will

continue to improve its performances particularly in faculty-student ratio, staff with PhD degrees, and international student enrollment.

### October

#### President WU travels to Canada and US

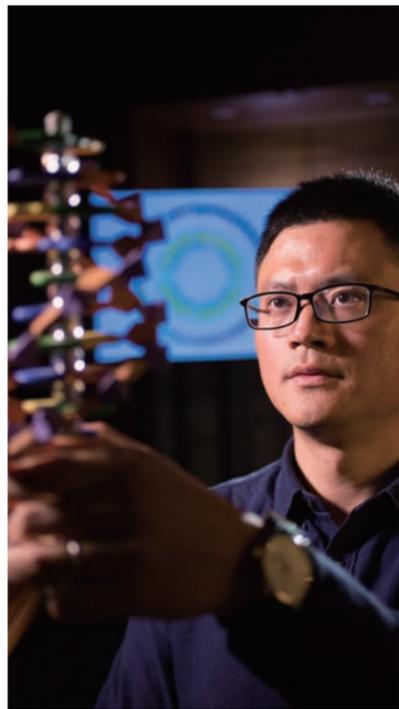
ZJU President WU Zhaohui visited top universities in Canada and the United States on October 8-12. During the trip, he met with senior leaders at The University of Toronto, Yale University and Harvard Univer-



sity to discuss strengthening collaboration. Between ZJU and The University of Toronto, an institutional MoU was renewed and two new agreements were signed to initiate cooperation in dentistry and education studies. ZJU also signed an agreement with Yale University in public health and another agreement with Harvard University in big data. In addition to leadership meetings, WU was pleased to visit the John King Fairbank Center for Chinese Studies, Harvard-Yenching Institute and Harvard Art Museums. During the trip, he stopped in San Francisco to visit Tsung-Dao Lee, ZJU alumnus and Nobel laureate in Physics (1957).

## Alumnus wins Australian Prime Minister's Prize

YANG Jian, who received his bachelor's degree in biological science and a PhD in statistical genetics from ZJU, was awarded the Australian Prime Minister's Frank Fenner Prize for Life Scientist of the Year. The award recognizes YANG's pioneering work in helping to unravel the complexity of the human genome and solve the "missing heritability paradox". His work enables researchers to determine the genetic factors behind complex diseases, opening the way to new drugs and better genomic risk prediction. YANG is currently a professor of statistical genomics at Institute for Molecular Bioscience, The University of Queensland. The prize is in honor of Professor Frank Fenner AC, an Australian virologist.



YANG Jian. Credit: Science in Public

## ZJU and Stanford hold materials symposium

The 2017 ZJU-Stanford Symposium on Materials Science was held in Hangzhou on October 11-12, attracting around 200 faculty members and students to explore the latest research findings on materials science. Stanford professors Paul McIntyre, Friedrich Prinz, and WANG Shanxiang delivered presentations on "Applications of Atomic Layer Deposition in Solar Fuel Synthesis", "Low Temperature and High Temperature Fuel Cells" and "Silicon Valley Innovation and Early Cancer Detection" respectively. The forum also touched upon key issues such as the funding situation of energy materials and the innovation culture in US and China. ZJU's School of Materials Science and Engineering signed a MoU with the Department of Materials Science and Engineering at Stanford in June 2017, ushering in a formal partnership.

## ZJU and Columbia hold biomedicine forum

The first joint biomedicine forum between ZJU and Columbia University was held in Hangzhou on October 24-25. The event was co-organized by ZJU's Institute of Translational Medicine (ITM) and the Wu Family China Center for Health Initiatives at Columbia. The forum was co-chaired by Prof. SUN Yi, dean of ZJU-ITM, and Dr. Anke Nolting, director of the Wu Family China Center and associate dean of Columbia University Medical

Center. In addition to academic discussions, the forum also featured an awarding ceremony honoring Dr. CHEN Zhu, a world-renowned hematologist and former health minister of China. He was presented with the second "Dr. Clyde and Helen Wu Award for International Understanding". The success of this forum has laid a solid foundation for the second one, which is set to take place at Columbia University in November 2018. The two sides will then specify concrete responsibilities in cooperative projects and search for new partnerships.

## George Church named ZJU Honorary Professor

George Church, an eminent professor of genetics at Harvard Medical School, was awarded the title of Honorary Professor of Zhejiang University on October 30. Church delivered a keynote speech at the awarding ceremony at ZJU, introducing several significant research findings on genome sequencing, genome editing and synthetic biology. Church developed the world's first direct genomic sequencing method and helped initiate the Human Genome Project in 1984. In collaboration with Church's team, researchers at ZJU and Fudan University announced a plan in October 2017 to launch the Personal Genome Project in China. The project is the latest addition, being the first in Asia, to the existing Global Network of Personal Genome Projects.

## November ■

### 13 ZJU scientists among world's most highly cited

Thirteen ZJU scientists are among 3,000 individuals included on the annual Highly Cited Researchers List compiled by Clarivate Analytics, which was previously part of Thomson Reuters. The 13 researchers come from the School of Materials Science and Engineering, College of Control Science and Engineering, College of Agriculture and Biotechnology, and College of Energy Engineering. ZJU has doubled its entries from six scientists in 2016 and, in China, is next only to Chinese Academy of Sciences and Tsinghua University. The listed scientists have distinguished themselves by publishing a high number of papers that rank in the top 1% most-cited in their respective fields over a recent 11-year period. The list covers 21 academic fields, ranging from business to engineering.

### ZJU world leading in eight disciplines

The Essential Science Indicators (ESI) database reveals that ZJU ranks 4th in China and 130th globally in terms of ESI papers. Among the total 22 research fields, 18 disciplines of ZJU have entered the global top 1%. Eight disciplines have entered the top 0.1% and five are among the top 50. The results have made ZJU a front-runner among universities on the Chinese mainland. Notably, ZJU's Computer Science has

made a breakthrough, ranking 30th in the world. The eight world-leading disciplines are agricultural sciences, chemistry, clinical medicine, computer science, engineering, materials sciences, pharmacology & toxicology, and plant & animal science.

### Adaptive shoes rivet attention in Dubai

Visitors were amazed by a pair of magic shoes on display at the Global Grad Show held in Dubai on November 13-18. During the Dubai Design Week, the "ADAP-SHOE" designed by ZJU post-graduates attracted visitors' attention. The adaptive shoes are a footwear collection based on the healing properties of acupressure and reflexology, transforming the act of walking into an experience of physical therapy. The shoe's silicone insole contains differently sized bubbles that correspond to the foot's four primary points of acupressure. This pressure stimulates zones elsewhere on the user's body, including the chest, the diaphragm, the digestive system and the pelvis. With an ancillary mobile application, the user can give full play to the adaptability of the shoe. The Global Grad Show exhibits the most innovative projects from the world's leading design schools.



## Strengthening research partnership in Indonesia

A ZJU delegation led by Executive Vice President SONG Yonghua attended the China-Indonesia Science, Technology and Innovation Cooperation Forum held in Jakarta on November 27. ZJU and Indonesia's Agency for the Assessment and Application of Technology (BPPT) unveiled a formal research partnership by establishing the China-Indonesia Joint Laboratory on Biotechnology. The joint lab aims to develop sustainable research collaborations by utilizing biological resources from both countries and promote the benefits of

biotechnological innovation. On ZJU's side, the lab will be coordinated by the College of Pharmaceutical Sciences, with contributions from chemistry, agriculture, and life sciences faculty. The inauguration was witnessed by top-level officials of both countries: Chinese Vice Premier LIU Yandong; Puan Maharani, Indonesian Coordinating Minister of Human Development and Cultural Affairs.

## December ■

### Four ZJU professors newly elected as academicians

The Chinese Academy of Engineering (CAE) and the Chinese Academy of Sciences (CAS) have unveiled the list of newly elected members in 2017. Four professors from Zhejiang University have won this honorable title thanks to their remarkable research achievements. New CAE members are: ZHU Lizhong, professor at the College of Environmental and Resource Sciences; Donald Grierson, professor at the College of Agriculture and Biotechnology. New CAS members are: WU Zhaohui, president of ZJU and professor at the College of Computer Science and Technology; YANG Deren, professor at the School of Materials Science and Engineering. According to third-party statistics, a total of 11 ZJU professors have been elected as members of the Academies over the past decade, following Tsinghua University (26) and Peking University (25) on the ranking. Meanwhile, among the 128 academicians newly elected in 2017, nine received their bachelor's degrees from ZJU – the largest number among Chinese universities. Currently, ZJU has 20 CAE members and 21 CAS members.

### Collaboration brings Buddhist titles to phone

International collaborations between ZJU's Buddhist Resource and Research Center



and the Buddhist Digital Resource Center (BDRC) in Massachusetts, USA have enabled mobile access to thousands of Buddhist titles. BDRC Lib, a mobile application jointly developed by ZJU and BDRC, is now available for download on the App Store. The application provides access to the complete BDRC Library operating online. This transnational cooperation aims to make use of the transformative power of technology to advance the preservation and accessibility of Buddhist literature. BDRC is a nonprofit organization dedicated to seeking out, preserving, organizing, and disseminating Buddhist literature. Headed by Professor HE Huanhuan, the Buddhist Resource and Research Center at Zhejiang University was established in March 2016. The center is China's first institute specializing in the preservation, synthesis and research of Buddhist resources. It serves as an operational hub for BDRC in Hangzhou, linking BDRC to the many existing Buddhist institutions and communities in and around the city.

### ZJU rings in 2018 with a festival for students

The fourth Student Festival of Zhejiang University kicked off with a spectacular parade on December 31, 2017. In addition to a giant parade consisting of 44 floats which represented various colleges and departments, the festival featured an impressive performance of dragon & lion dancing and a remarkable display of cutting-edge technologies. The day culminated with an exciting countdown to 2018. On the New Year's Eve, a five-hour gala performance was held at ZJU's Zijingang Campus. Senior leaderships of the University came onto the stage and embraced the new year together with students and staff members. The theme of the fourth Student Festival was "Health, Happiness, Growth and Dream". As an ingenious tradition of ZJU, the student festival aims at fostering a vibrant campus culture and ensures that students connect themselves across disciplines and develop solidarity, creativity and innovation skills.

### ZJU Hosts China-New Zealand Innovation Conference

The first China-New Zealand Innovation and Commercialization Conference, co-organized by ZJU and the University of Auckland, was held in Hangzhou on December 12-14. The conference featured an impressive line-up of keynote speakers, including nine fellows of the Royal Society of New Zealand, and opinion leaders from various facets of the innovation ecosystem. The University of Auckland and ZJU showcased their internationally recognized expertise in five key areas, namely digital health, food for health, aluminum smelting technology and innovation, drug discovery and development, and advanced materials and manufacturing. With the theme of "Ideas to Life," the conference aimed to build a bridge connecting China's innovation-driven development strategy with that of New Zealand.



Buddhist statue reproduced.  
Credit: China News Service

## In the Media ■

### Chinese college offers traditional lion and dragon dance courses

Traditional Chinese lion and dragon dance has become popular at Zhejiang University. JIANG Kai, the sole teacher, said the courses he offers at the college are actually competitive lion and dragon dance, a style which can usually be seen as a professional sports event. Though JIANG was concerned that not many students would apply for his class, the class has exceeded his expectations. A total of 170 students, both male and female, from various majors have applied for the course. Many of his students now have completely thrown themselves into the class, and some even post their daily study on social media. Due to the increasing concern of promoting the Chinese traditions, it is expected that more and more Chinese universities will make the lion and dragon dance classes available to their students. (China Radio International)

### 3D printed Buddhist statues displayed in east China

Thanks to 3D printing technology, three reproductions of Buddhist statues in the Yungang Grottoes, a 1,500-year-old UNESCO World Heritage site, are displayed in the eastern coastal city of Qingdao. It took 2 years to reproduce and display these three full-size replicas of Buddhist statues from the caves in northern China's Shanxi Province. The reproduction program

was jointly launched by Yungang Grottoes Research Institute, Qingdao Publishing Group and Zhejiang University. Researchers built 3D models for the three statues, and then used 3D printers to reproduce them. Besides, the reproduction programs of two other caves, supported by 3D printing technology, are underway. (Xinhua)

### Chinese researchers find "secret weapon" of weed

Scientists from Zhejiang Province have used genomic analysis to uncover how weeds suppress the growth of other plants. The research, headed by Professor FAN Longjiang with the College of Agriculture and Biotechnology at Zhejiang University, was published in Nature Communications. From a species of weed in the paddy field, they have in the genome identified three copies of gene clusters involved in production of an allelochemical used against rice and one copy of a phytoalexin gene cluster used against blast disease. Professor FAN also noted that allelopathy could be an alternative weed management strategy with a lower environmental cost. (Xinhua)

### Chinese uni develops soft-body robotic manta ray

A soft-bodied robot that can swim like a manta ray has been created at China's Zhejiang University. The robots that can swim as fast as six centimeters per second have been developed for information gathering in lakes and oceans. (CGTN)

Grand festive celebrations were held at the 120th anniversary of ZJU.



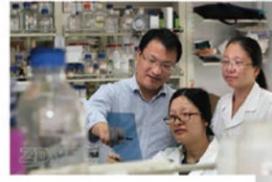
Urban landmarks, including the Empire State Building in New York, were glowing with ZJU blue.



ZJU hosted the University Presidents Summit in May.



Research and Service



Research findings by ZJU scientists appeared on *Nature*, *Science* and *Cell*, advancing our knowledge of immunology, cell biology, and neurobiology, etc.



With donations from We Doctor Group, ZJU will build the first open medical AI platform in China.



China's first National Engineering Laboratory for Waste Incineration Technology and Equipment was set up at ZJU.



The provincial Zhejiang Lab, of which ZJU is a key founding member, was inaugurated and aims to become a world-class innovation base.

Front Runners

·Award Winner

The 45th International Exhibition of Inventions in Geneva

- April -



·Undergraduate Winner

Global Grand Challenges Summit—Student Poster Competition

- July -



·Second Straight Win

The International Aerial Robotics Competition (Asia/Pacific Venue)

- August -



·National Champion

The third China College Students "Internet Plus" Innovation and Entrepreneurship Competition

- September -



Global Engagement



During the ZJU-UChicago Academic Week in April, the enriching dialogues turned out to be, as students said, "exactly what they need".



The ZJU-Stanford Academic Week in June saw the birth of a joint health lab between the two universities.



ZJU President WU Zhaohui visited top universities in North America in October.



October saw the grand opening of ZJU's International Campus, a new model of transnational education.

A New Journey

Higher Global Rankings



#87	#38	#51-60	#101-125
QS World University Rankings 2018	QS Graduate Employability Rankings 2018	THE World Reputation Rankings 2017	THE World University Rankings 2018 (Arts & Humanities)

Double World-Class Project

ZJU has been selected for the "Double World-Class Project", a brand-new national initiative to develop world-class universities and disciplines. Eighteen disciplines of ZJU have entered the Project, next only to Peking and Tsinghua.



Year in Review

A look back at ZJU highlights in 2017

# RESEARCH HIGHLIGHTS

A village in southwest China. Credit: CHEN Siyuan



## SOCIAL SURVEY & BIG DATA

China is capturing increasing attention globally. However, due to the lack of systematic survey microdata, the objective reality of China's microcosmic society remains blurred, and that has kept scholars both at home and abroad from seeing the "whole elephant".

### ZJU solutions

A special database focusing on Chinese households was officially released at Zhejiang University in December 2017. This is China's first family database which integrates offline sample survey data, Internet-based big data and statistics from governments.

With this comprehensive database, the University aims to set a baseline for China Study, enabling the world to understand the country better.

### What we do

From 2011 to 2017, researchers from ZJU's Social Science Experiment Center (SSEC) and the Research Center for Social Survey conducted four rounds of panel survey. They collected numerous variables of tens of thousands of urban and rural families in China (around 6000 variables per family) and further enriched the data through an inter-university sharing mechanism.

The database includes information of the basic household structure, employment, income, expenditure, land use, migration, social security, education, etc.

"The database is primarily based on data from offline surveys, which we hope will truly support social studies and decision making", said ZJU Vice President LUO Weidong.

According to YU Yangang, deputy director of SSEC, the entire survey process was computer-aided and strictly monitored by faculty and senior researchers to ensure data quality.

### Implications

The database will provide first-hand and down-to-earth information for humanities and social science researchers as well as policy makers.

In June 2016, ZJU released the results of China Rural Household Panel Survey (CRHPS), which already utilized the survey data collected by SSEC in 2015 and the previous years. The bluebook reveals paradigms and problems in China's rural development and serves as an invaluable reference for policy formulation.

Through continuous matching, aggregation and expansion of statistics, the database will continue to upgrade its scale and widen the range of applications. "It is expected to help China to take the lead in family research", said GAN Li, director of SSEC.

The database is accessible for free to researchers worldwide.

Interested scholars and students are to submit a research proposal to [rwsdata@zju.edu.cn](mailto:rwsdata@zju.edu.cn) for further review.

General enquiries should be directed to [zdmd@zju.edu.cn](mailto:zdmd@zju.edu.cn).

# PHONE HACKING

Speech recognition assistants such as Siri are increasingly popular. Allowing devices to be controlled by voice gives hackers a way of targeting these devices. Thus, it raises an important question: is it possible to activate these assistants with hidden voice commands that are incomprehensible to humans?



## ZJU solutions

Professor XU Wenyuan and her colleagues from the Ubiquitous System Security Lab (USS Lab) at ZJU's College of Electrical Engineering have designed a type of ultrasonic messages called "DolphinAttack", which is completely inaudible to the human ear. As expected, DolphinAttack could sneak into the phone and manipulate its applications. In response, the team proposed hardware and software defense solutions to counter the potential threat.

## What we do

DolphinAttack can modulate voice commands on ultrasonic carriers (e.g.,  $f > 20$  kHz) to achieve inaudibility. By leveraging the nonlinearity of the microphone circuits, the modulated low frequency audio commands can be successfully demodulated, recovered, and more importantly interpreted by the speech recognition systems.

The research team validated DolphinAttack on popular speech recognition systems, including Siri, Google Now, Samsung S Voice, Huawei, HiVoice, Cortana and Alexa. By injecting a sequence of inaudible voice commands, they observed a few proof-of-concept attacks: activating Siri to initiate a FaceTime call on iPhone, activating Google Now to switch the phone to the airplane mode, and even manipulating the navigation system in an Audi automobile.

The team pointed out the feasibility to detect DolphinAttack by classifying the audios using supported vector machine. They suggested re-designing voice controllable systems to be resistant to inaudible voice command attacks. Specifically, they proposed two hardware-based defense strategies, namely microphone enhancement and baseband cancellation. They said software-based defense strategies, such as using a machine learning based classifier, can also be used to detect DolphinAttack.

## Implications

One way to mitigate the threat is to redesign microphones to reduce their sensitivity to ultrasonic carrier waves. However, this does not help people who already own a phone that is at risk. In this sense, a software-based solution is more practical. As ultrasonic commands are different from natural voice in several ways, it might be meaningful to develop a system which can spot ultrasonic commands and deliver it to millions of phone users.

<http://www.ussslab.org/projects/dolphinAttack.html>



The related paper titled "Dolphin Attack: Inaudible Voice Commands" won the Best Paper Award at the 2017 ACM Conference on Computer and Communications Security held on October 30 - November 3 in Dallas, USA. This is the first time that a Chinese higher education institution has clinched the award. ACM is the world's largest educational and scientific computer society.

# GENETIC DIVERSITY

With the development of modern intensive agriculture, many traditional agricultural systems have been abandoned, resulting in the loss of local genetic resources and indigenous farming techniques.



Rice fish. Credit: NOZO

## ZJU findings

Professor CHEN Xin and his colleagues at ZJU's College of Life Sciences examined how traditional farmers preserve the genetic diversity of a local carp, which is referred to as "paddy field carp" (PF-carp), in a 1,200-year-old rice-fish co-culture system in Zhejiang Province. Their molecular and morphological analysis showed that the PF-carp has changed into a distinct local population with higher genetic diversity and diverse color types.

## What we do

This traditional rice-fish co-culture system is considered as a sustainable form of agriculture that provides rice grain and fish for local farmers. The Qingtian rice-fish system in southern Zhejiang Province has been listed as Globally Important Agricultural Heritage Systems (GIAHS) by the UN Food and Agriculture Organization.

ZJU researchers quantified the effects of traditional farming activities on the genetic diversity of the PF-carp in the Qingtian system. According to their research, thousands of small farmer households interdependently obtained fry and parental carps for their own rice-fish production, resulting in a high gene flow and large numbers of parent carps distributing in a mosaic pattern in the region.

Landscape genetic analysis indicated that farmers' connectivity was one of the major factors that shaped this genetic pattern. Population viability analysis further revealed that the numbers of these interconnected small farmer households and their connection intensity affect the carps' inherent genetic diversity.

## Implications

Traditional farming secures the genetic diversity of PF-carp and its viability over generations through interdependently incubating and mixed-culturing practices within the rice-fish system. Thus, the locally adapted ways of traditional farmers can become a "hot spot" for genetic diversity conservation in agriculture.

<http://www.cls.zju.edu.cn/>



# WE ARE HIRING!

## Join us, grow with Zhejiang Lab.

Established in September 2017 by Zhejiang Provincial Government, Zhejiang University and Alibaba Group, Zhejiang Lab is an open and collaborative research institute pushing forward innovation with a global vision.

### We focus on frontiers.

- ▶ Future Network Computing
- ▶ Ubiquitous Information Security
- ▶ Generalized Artificial Intelligence
- ▶ Intelligent Equipment and Robots
- ▶ Barrier-free Perception and Interconnection

### Contact us

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ZHEJIANG LAB



## The AI Next Door

Shareholders and investors, doctors and patients in the cloud, right in Hangzhou.

By Artyom Tsaturyan

In recent months, all foreign students, including me, have come to realize that Hangzhou is the electronic hub, or as we call it, the Silicone City of China. We had heard about or been using Alibaba services long before arriving in the city, but it took us a while to get used to the cashless society.

Up till today, we still keep cash, well, just in case. But we get some troubled looks from the shop assistants while digging into our wallets.

In December, we had an inspiring field trip on the Internet of things. From “intelligent” hospitals to “smart” entrepreneurship.....both are envisioned by men, currently semi-independent and reaching the heights of Artificial Intelligence.

## Smart hospital

For a smart hospital, it was a little hard to imagine robots instead of doctors, but what we found there was more exciting than any robot. We were greeted by a smiling nurse, a human, who led us to the second floor. It was a clean, modern hospital with nothing out of place. The rooms were ordinary, but, to our delight, the usual hospital smell and scary tools were missing.

A hospital without medicine and tools? Were we in the right place? Yes! We were at one of the clinics of WeDoctor Group. What started as philanthropy has become one of the most exciting developments in the medical sphere. The Group now provides TeleMedicine, virtual care from professional doctors, connectivity, and personalized care.

Hospitals are crowded, sometimes not very hygienic, while doctors are busy and don't even recognize their patients. Let's be fair, nobody likes to go to hospital. With the help of WeDoctor, you don't need to anymore. First, you go to one of the clinics, get a full check-up, get your info saved in a file and a doctor will be assigned to you. For those who live near hospitals or at schools where nurses can be easily contacted, this may not sound like a revelation. But for those in rural areas, and those who need to “trudge” to get to the nearest hospital only to be told to wait in line – this could be a salvation.

This isn't even the most exciting part. In most cases, you wouldn't even need to deal with a doctor. Download the app, sign in, tell the AI your symptoms, and you will be told what medicine you need and even be written a prescription. You don't trust the AI? Too good to be true? It's totally understandable. Perhaps a trial use would be helpful.

So how can we build trust towards smart hospitals was my question for our guide. We need to start from patient satisfaction. And one way to build it is through referrals and follow-ups. ▶

## Smart entrepreneurship

Our second stop was “WeiLian”, an online space for modern investors and entrepreneurs. What WeiLian provides is information, connectivity, and access.

In the age of technology, information means power and money. Potential investors don't need to go to gatherings or meetings to find the next Google or WeChat. They just need to download the app and go through the database of startups which the AI will categorize according to the investors' preferences.

WeiLian is also a social platform for investors and startups. A young company created by ZJU alumni (Beta 31.10.2014), WeiLian already boasts a gigantic pool of investors and startups. E-commerce is the leading category. WeiLian has surpassed traditional investment methods in Shanghai and Hangzhou. Beijing is the third on the list but other cities are catching up.

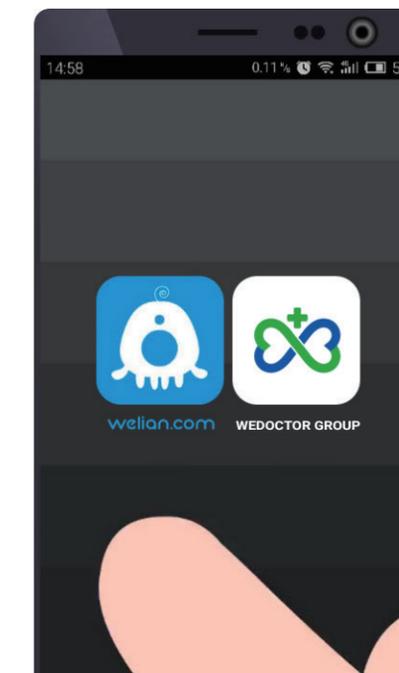
The smart AI tracks all the activities of investors. Just with a click of your finger, you can see how interested a certain investor is in your project and which investor best fits your aspirations.

Just as an octopus uses its intelligent brain to coordinate numerous tentacles, WeiLian's AI is able to coordinate numerous startups and investors, contributing to a better business environment.

In recent years, technology has entered all aspects of our life. It is becoming increasingly difficult to live without Alipay or GPS. But still, our mobile phones and computers are not very reliable and it is too early to put all responsibilities on AI. In the case of hospitals, at any moment the network may be interrupted and the computer freeze. Besides, the elderly may not be able to use technology as young people do.

We still have a long way to go to become a fully automated society with AI connectivity in

all fields, but the foundation seems solid. We are on the way to building a better future for the next generation and as Mr. Putin, Elon Musk, and many others have mentioned, AI is the next global race. The winners will be the leaders of the future world. How will you be part of that world?



**Artyom Tsaturyan**  
First-year master's student, Future Leaders Program



The Future Leaders Program is a two-year master's program offered by ZJU's School of Public Affairs. It is committed to fostering future leaders in public sectors, who are fully aware of the governmental systems and social-economic status of contemporary China and other countries. Taught fully in English, the program offers a variety of specialism courses, leadership training, field trips, etc.

[www.spa.zju.edu.cn](http://www.spa.zju.edu.cn)



The CBD skyline of Hangzhou. Credit: ZHU Difeng

## My experience in ever-changing China

By **Mark Greeven**  
for China Daily

The first response from my academic colleagues in the Netherlands when I announced I would study innovation in China in 2004 was, “That must be a short project!”

Today the world is embracing China as an innovation nation, one where residents have a “ringside seat to entrepreneurial development”, according to Thinkers50. Facilitating the talent development of hundreds of elite students and next generation change-makers is my passion. Receiving multinationals eager to study new technologies and business models but also delegations from Silicon Valley entrepreneurs and investors is my contribution to building bridges — who could have thought that 13 years ago?

I was inspired by the early endeavors of people like

Jack Ma, Fang Yi and Sun Deliang in Hangzhou, who made me believe in China’s innovation potential. I had the luck to meet them early on and could not help but feel their passion to make a difference. Jack Ma I met during a family day meeting in Taobao, Fang Yi was still a student entrepreneur at Zhejiang University and Sun Deliang was in the first years of developing his platform strategy.

At the same time, I was lucky to be in Hangzhou. Not only because of the beauty of the city but also the sheer force of change ongoing there. Coming from the city of Rotterdam in The Netherlands, a “city of doers”, I knew Hangzhou was going to be a global place and I had to be part of that development. ▶

I still remember that in my first years here, I had to get loads of cash from my foreign bank card with undersupplied ATMs. Multiple trips to the not-so-friendly bank attendants and in the end knowing the location of all ATMs and bank offices in a 2 mile radius, made me long for the efficient Dutch financial services. No longer. Nowadays life in China is cashless.

My phone with Alipay and WeChat Pay is sufficient for me to buy groceries, book a hotel, rent a bike, watch a movie or manage my finances, among many other things. In just a few years, I dare to say in the last 5 years, China’s mobile payment revolution has changed the way I consume in China. Going back to the Netherlands is like stepping back in time, where QR codes and mobile payments are replaced by bank cards and cash.

A while back, a student applied to become my teaching assistant. He didn’t use a CV or cover letter. Instead, he made a website — extremely professionally done I might add — introducing him, his passions and projects. All visual and focused on how he was different than the rest. He was not asking for a salary or job description, but instead wanted to know why I became a professor, my ambitions and how I work with students.

Another example I remember is from my classes on cross-cultural management in Zhejiang University. While initially students were hesitant to share



**Dr. Mark Greeven** was an associate professor at the School of Management, Zhejiang University (2012-2017).

opinions, nowadays these classes are as colorful as a TV show where students no longer make slide-show presentations but perform their assignments, as in theater.

And of course, the hit show this summer was not a TV-produced soap opera on China’s history but the Tencent-produced “Rap of China” where youngsters vividly express their perspectives on the new China. And no, it is not a copy of some American show, but a new type of Chinese rap. Mixing American and Asian styles, it even gave rise to popular, unique dialects from Sichuan and Chongqing.

The embrace of digital technology and the rise of a new generation are just two experiences of change I have from my time in China. As a longtime foreign guest, in China I have not only witnessed change but become an active participant. This is the beauty of China: everything is possible. Change is embraced and challenges are opportunities. Coming from a city of “doers”, I appreciate this mindset. Maybe thriving on uncertainty is the biggest lesson China has taught me.

**Connection:** How would you describe ZJU?

**Mark Greeven:** Entrepreneurial, deeply embedded in the local business community and Chinese society, elite mindset, global impact.

**Connection:** Have you got any unforgettable experience at ZJU?

**Mark Greeven:** I’m impressed by the students of ZJU, whose quality and motivation, entrepreneurial spirit and competitiveness is unparalleled. Organizing the World Entrepreneurship Forum, directing the Global Entrepreneurship Program and working with hundreds of local entrepreneurs — many of them alumni or students of ZJU — are truly unforgettable experiences.

**Connection:** What is your advice for making ZJU a better place?

**Mark Greeven:** As there is always room for improvement, even for leading institutions such as ZJU, I would put emphasis on talent development. The first and most important priority of any university is to develop the talent of the future. In fact, I think an elite university such as ZJU should focus on facilitating the development of change makers, a new generation of leaders, entrepreneurs and experts with a strong sense of social responsibility and global mindset. It is of the utmost importance to more deeply integrate global talents into ZJU’s community, via students, fulltime professors and international events. ZJU needs a wider international talent pool, from all over the world, not only studying but also staying and working in ZJU and Hangzhou. To make ZJU a true change maker, a diverse and international community is necessary.

## International Workshop on Blue Carbon

📅 January 25-27, 2018  
 📍 Zhoushan Campus  
 🏢 Ocean College, Zhejiang University; the Third Institute of Oceanography, State Oceanic Administration.

## Forum on the Development of World-class Discipline in Education

📅 March 17, 2018  
 📍 Tianjiabing Academy, Xixi Campus  
 🏢 College of Education, Zhejiang University

## International Symposium of Trans-lingual and Trans-culture Communication Study

📅 March 22-23, 2018  
 📍 Qizhen Hotel, Zijingang Campus  
 🏢 College of Media and International Culture, Zhejiang University; Centre for Contemporary Chinese Studies, Durham University; School of Advanced Study, University of London

## Hangzhou International Stellarator Workshop

📅 March 26-28, 2018  
 📍 Liutong Hotel, Hangzhou  
 🏢 Department of Physics, Zhejiang University

## Collecting and Cultivating: An International Forum for the Concept and Practice of the Teaching Museum

📅 March 26-28, 2018  
 📍 Alumni Building, Zijingang Campus  
 🏢 Zhejiang University Museum of Art and Archaeology

## The 3rd Sino-Portugal Advanced Materials Innovation Forum

📅 April 8-12, 2018  
 📍 to be confirmed  
 🏢 Department of Polymer Science and Engineering, Zhejiang University; Fundação para a Ciência e Tecnologia

## Symposium on Frontiers of Epigenetics Research

📅 April 14-16, 2018  
 📍 Zijingang Campus  
 🏢 Life Sciences Institute, Zhejiang University; Zhejiang Provincial Natural Science Foundation

## The Qianjiang International Conference of Adolescent Medicine

📅 April 20-21, 2018  
 📍 to be confirmed  
 🏢 School of Medicine, Zhejiang University; Children's Hospital Los Angeles

## The International Seminar on "Big Data + Law" Frontiers

📅 April 20-22, 2018  
 📍 to be confirmed  
 🏢 Guanghua Law School, Zhejiang University; Yale Law School Paul Tsai China Center

## International Symposium on Ligaments & Tendons-XVII and Musculoskeletal Regeneration Research Network Symposium

📅 April 20-22, 2018  
 📍 Xixi Hotel, Hangzhou  
 🏢 School of Medicine, Zhejiang University

## Qianjiang International Forum of Pediatric Rheumatology and Immunology

📅 April 20-23, 2018  
 📍 Grand Parkray Hangzhou  
 🏢 School of Medicine, Zhejiang University

## The 9th International Conference on the New Haven School

📅 April 22-24, 2018  
 📍 to be confirmed  
 🏢 Guanghua Law School, Zhejiang University; Yale University

## International West Lake Symposium on Plasma Simulation

📅 May 3-5, 2018  
 📍 Liutong Hotel  
 🏢 Department of Physics, Zhejiang University

## Inter-University Symposium on Asian Megacities

📅 May 4-7, 2018  
 📍 to be confirmed  
 🏢 College of Civil Engineering and Architecture, Zhejiang University

## The 2nd International Symposium on Pediatric Gastrointestinal and Nutrition

📅 May 11-13, 2018  
 📍 The Children's Hospital, Zhejiang University School of Medicine  
 🏢 School of Medicine, Zhejiang University

## Asia Pacific Regional ISSX Meeting

📅 May 11-14, 2018  
 📍 Mong Man Wai Building, Zijingang Campus  
 🏢 School of Pharmaceutical Sciences, Zhejiang University

## The Coupling of Art and Science: China Ceramic Artists Invitational Exhibition

📅 May 15-30, 2018  
 📍 to be confirmed  
 🏢 School of Humanities, Zhejiang University

## The 2nd International Symposium on Pediatric Lymphohistiocytic Diseases

📅 May 17-20, 2018  
 📍 SORL Hotel, Hangzhou  
 🏢 School of Medicine, Zhejiang University; Chinese Pediatric Society, Chinese Medicine Association

## Hangzhou International Conference on Frontiers of Data Science

📅 May 19-21, 2018  
 📍 Narada Grand Hotel  
 🏢 School of Mathematical Science, Zhejiang University

## International Symposium on Quantum Computing and Quantum Optics

📅 May 23-25, 2018  
 📍 Shaw Run Run Science Building  
 🏢 Department of Physics, Zhejiang University

## The 3rd International Conference on Microstructure and Properties of Materials

📅 May 27-30, 2018  
 📍 to be confirmed  
 🏢 School of Materials Science and Engineering, Zhejiang University

📄 For updated information, please visit: <http://www.zju.edu.cn/english/main.htm>