#### **Imperial College London & the Chinese military**

#### 16.06.2024

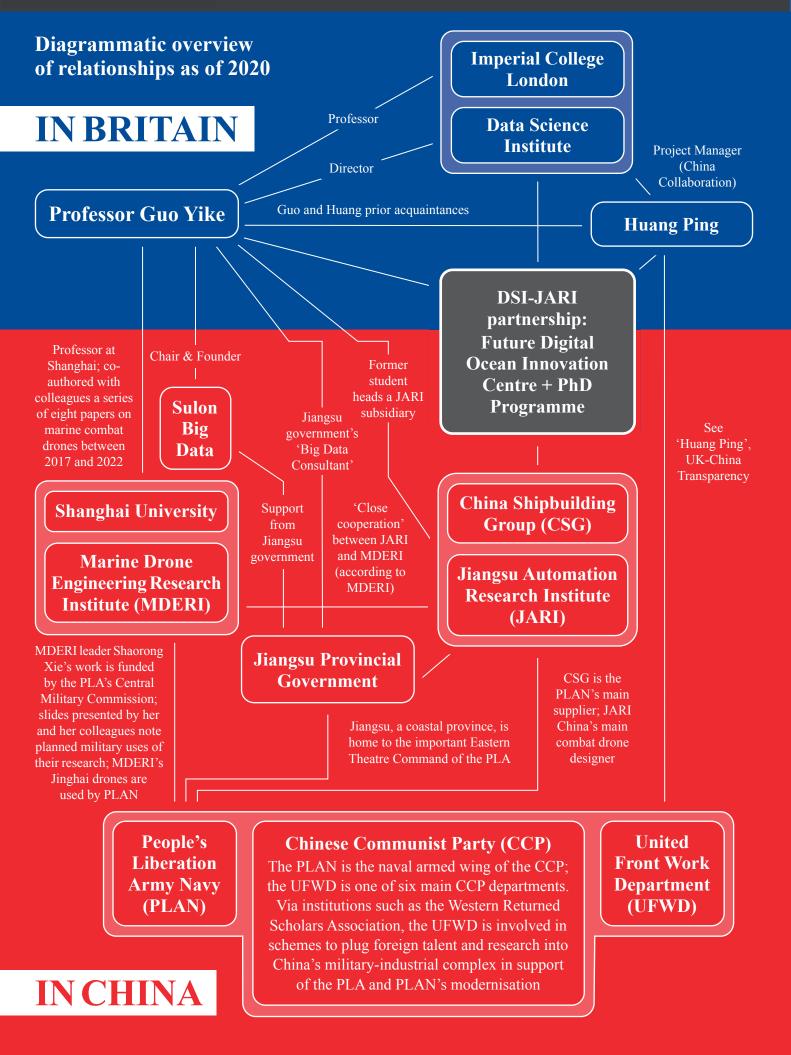
# Huang Ping 黄萍, Professor Guo Yike 郭毅可, and Imperial College London's Data Science Institute

#### Overview

- Professor Guo Yike is a world-leading data scientist. In 2017, whilst he was head of the Data Science Institute (DSI) at Imperial College London ('Imperial'), Guo began to work with scientists based in China on research into methods for coordinating swarms of marine combat drones for military purposes. This research was funded by the Chinese government.
- Guo's collaborators in this research were scientists at Shanghai University's Marine Drone Engineering Research Institute (MDERI) which also works with the Chinese military. Guo's lead collaborator in the research has received Chinese military funding for classified projects.
- In 2017, Guo was appointed as "Big Data Consultant" to the provincial government of Jiangsu. Guo also set up a company there, Sulon, to work in the big data industry in Jiangsu with government support. Sulon's promotional materials referenced the involvement of Imperial academics who have no knowledge of Sulon's existence.
- In 2018, Guo began to organise a partnership between Imperial and the Jiangsu Automation Research Institute (JARI). JARI is the leading designer of China's marine combat drones and is a subsidiary of the Chinese navy's main contractor, China Shipbuilding Group (CSG). JARI has worked on marine combat drone coordination with Guo's academic collaborators at MDERI.
- In 2018, Imperial hired Huang Ping on a "casual worker contract" and she began to work on the JARI project. In 2019, Imperial hired Huang to work as a manager at the DSI, which was headed by Guo. Huang is a British citizen of Chinese origin. Her role at the DSI was to organise and administer the JARI partnership and other DSI partnerships with China.
- Previous research by UK-China Transparency investigates Huang's close connection with the United Front Work Department (UFWD) of the CCP. Huang and Guo were part of a delegation hosted China by the UFWD in 2019.
- An agreement for the DSI-JARI partnership was signed in 2019. It was to be a "£3m project" between Imperial's DSI and JARI, forming a 'Future Digital Ocean Innovation Centre'. This was to involve leading data scientists at Imperial working with JARI on a range of projects on ocean modelling and forecasting; on developing a deep-learning framework for oceanic data; on work to integrate, analyse and visualise JARI/CSG's ocean data sets; on the use of blockchain for maritime trade documents and data; and on machine learning technology for port logistics. The agreement also provided for JARI to sponsor PhD studentships at the DSI.
- Whilst these projects would not necessarily constitute military research, a Mandarinlanguage email sent by JARI to Huang Ping in 2018 proposed military end-uses for the research. UKCT received this email from Imperial in response to an FOI request for email chains relating to Huang's role in the JARI-DSI partnership negotiations. JARI's intention

to use the partnership for military ends was not translated from Mandarin into English in the email chains provided by Imperial to UKCT, which UKCT has published in full.

- In March 2021, the entire JARI-DSI partnership was terminated and all upfront funding was returned by Imperial. According to Imperial, this decision was made "in consideration of UK export control legislation and consultation with UK government". One export license application had been submitted but Imperial were told no license would be required for the work it related to.
- In October 2021, Huang's role at the DSI was changed to exclude blanket responsibility for "China collaboration". Huang continues to work at Imperial and is responsible for running lucrative summer and winter schools.
- According to Imperial, "Prof Guo ceased to work at the DSI, and his role there formally ended, when he left Imperial in 2022."
- UKCT's analysis of the network of actors (see diagram overleaf) connected to the DSI-JARI partnership in China, and the British scientists whose involvement was planned, suggests that the effect of the JARI-DSI partnership would have been to link top British expertise and resources in to China's national military marine combat drone research programmes, possibly without the knowledge of the British scientists. Prior to the publication of this report, Imperial told UKCT that "The report does not provide evidence to support these claims, or pinpoint specific relevant connections."
- Guo remains director of a British company, BGI Research Foundation UK Ltd, which is controlled by BGI Group. BGI Group is a controversial Chinese genomics company that has worked with the Chinese military and has been sanctioned by the United States government. *UKCT will publish a separate report on BGI Group in the UK*.



#### **Background**

In November 2023, UK-China Transparency published a set of notes on Huang Ping 黄萍, a British citizen of Chinese origin in the United Kingdom. The notes detailed Huang's connection to the United Front Work Department (UFWD) of the Chinese Communist Party (CCP) and her work promoting technology collaboration between the UK and China. This included promoting Chinese companies working on military technology.<sup>1</sup>

The notes concluded with reference to Huang's current role as "Events Manager and Executive Manager for China collaborations" at Imperial College London's Data Science Institute:

"[...] the Data Science Institute has engaged itself in several collaborative relationships with Chinese entities. UKCT has sent a Freedom of Information request to Imperial regarding these and Huang's role and will publish an update and additional information about this matter in due course."

This report is a follow-up to those notes. It also bears relation to the findings of Channel 4 *Dispatches*' documentary, 'Secrets and Power: China and the UK', which examined the work of Professor Guo Yike 郭毅可, then director of Imperial College London's Data Science Institute.<sup>2</sup>

Professor Guo's work on military drones with Shanghai University

Guo Yike became a full professor at Imperial College London ('Imperial') in 2002. In 2014 he became the founding director of Imperial's Data Science Institute (DSI). Guo is considered a world-class data scientist. Guo has two live company directorships listed at Companies House, and on these his nationality is listed as "English", which may suggest he is a British citizen.

In 2017, Guo began to publish a series of papers on marine combat drones with scientists from China. The titles of the papers referred to explicit military end-uses for the technologies explored in the text, such as "The Cooperative Defense Strategy by Multi-USVs" [unmanned surface drones], and "The Combat of Unmanned Surface Vehicles Based on Wolves Attack". A full list of the papers is published in Appendix 1.

Guo published 8 such papers between 2017 and 2022. That year, Guo also published a paper on how to use artificial intelligence (AI) to improve missile design. Guo's co-authors included two Chinese scientists associated with China's State Key Laboratory of Aerodynamics, China Aerodynamics Research and Development Center,<sup>3</sup> which is a part of the Chinese military, the People's Liberation Army (PLA).<sup>4</sup>

Disclaimer: UKCT Director Sam Dunning worked as co-producer of the documentary

<sup>&</sup>lt;sup>1</sup> https://ukctransparency.org/wp-content/uploads/2023/11/Notes-on-Huang-Ping-%E9%BB%84%E8%90%8D.pdf

<sup>&</sup>lt;sup>2</sup> https://www.channel4.com/programmes/secrets-power-china-in-the-uk-dispatches

<sup>&</sup>lt;sup>3</sup><u>https://web.archive.org/web/20230619113540/https://www.sciencedirect.com/science/article/abs/pii/S1270963822003145</u> <sup>4</sup><u>https://unitracker.aspi.org.au/universities/china-aerodynamics-research-and-development-center/</u>

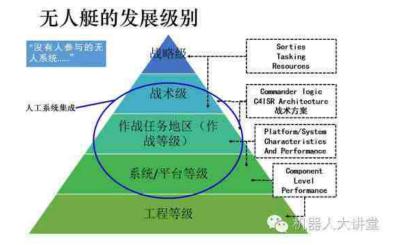
On all the marine combat drone papers, most of Guo's co-authors were researchers from Shanghai University, where Guo was dean of the computer science department from 2015 to 2020.<sup>5</sup>

All the papers but one state that the research behind them was funded by grants from various Chinese bodies. (These grants were not received by Imperial.) The grants mentioned are as follows:

- National Natural Science Foundation of China (Grant No.61625304) mentioned in all seven papers that state their funding source.
- Innovation Program of Shanghai Municipal Education Commission (Grant No. 14YZ024) mentioned by five of the seven papers that state their funding source.
- State Key Program of National Nature Science Foundation of China (Grant No. 61936001) mentioned by one of the seven papers that state their funding source.
- Science and Technology Commission of Shanghai Municipality (16511102400) mentioned by four of the seven papers that state their funding source.

On each of the eight marine drone papers, the most senior person collaborating with Guo was Xie Shaorong 谢少荣. According to a Chinese government database, she is the person responsible for the main grant behind the papers, grant 61625304 of the National Natural Science Foundation, which is for intelligent robotics.<sup>6</sup>

In 2016, Xie was described as "director of Shanghai University Marine Drone Engineering Research Institute" (MDERI, 上海大学无人艇工程研究院), a role she appears to occupy still. A blog report from that year which describes a presentation given by Xie and her colleagues explains this work in the context of the initial development of marine drones for mapping China's submarine features before explaining the broader context: US Navy developments in marine drone engineering, and the need to develop these technologies for the purposes of the Chinese military. Slides contained in these reports and apparently produced



<sup>&</sup>lt;sup>5</sup> <u>https://cse.hkust.edu.hk/admin/people/faculty/profile/yikeguo</u>

<sup>&</sup>lt;sup>6</sup> https://stcsm.sh.gov.cn/cmsres/14/14c304108e2444e488092458093c6f33/09b847fbc6386ab0e2b3ef2fdbc3fe35.pdf NB this link goes to a Chinese government website. UK-China Transparency has also downloaded this file and can share it if required.

by Xie's team illustrate the intended development of the technologies from engineering phases through to sortie training and tactical and strategic planning (see below).<sup>7</sup>

The initial fruit of Xie and her MDERI colleagues' work had been to develop the awardwinning Jinghai 精海 series of unmanned vessels, which is regarded as a seminal achievement in Chinese marine drone development. The first model in the series was announced in 2013.<sup>8</sup>

In 2017, evidence submitted to the US-China Economic and Security Review Commission of the US government stated that the Jinghai series had been "evaluated by the former General Armaments Department and the People's Liberation Army Navy [PLA Navy] Equipment Department".<sup>9</sup> Chinese higher education sources (including Shanghai University) attest to the Jinghai series winning a PLA Navy award and to the series' military applications.<sup>10</sup>

According to Shanghai University, Xie oversees a National Defence Science and Technology Innovation Special Zone (NDSIS) Project 国防科技创新特区项目.<sup>11</sup> The NDSIS scheme scheme has been described as "a crucial component of the Central Military Commission's Science & Technology Commission-led effort to mobilize civilian resources and personnel to actively participate in defense innovation projects. It appears to be a research funding program sponsored by the Science & Technology Innovation Bureau of the CMC S&T Commission. It is led and managed by the National Defense Rapid Response Small Group, manned by CMC staff and Shenzhen government personnel."<sup>12</sup> Details of Xie's NDSIS project are classified and not available in the public domain.

Xie can thus be characterised a leading marine drone scientist working with the Chinese military. This was Guo's colleague at Shanghai University, and the leading collaborator on the research which Guo took part in that details methods for coordinating the action of marine combat drones.

## Imperial's collaboration with the Jiangsu Automation Research Institute

In response to an FOI request sent at an unknown time (not by UKCT), Imperial released a list of "Funding from Chinese companies and institutions". The list has since been removed from Imperial's website; however, UK-China Transparency has now published it online (having earlier saved a copy).<sup>13</sup>

The list contains a number of projects involving Huawei, and a number related to rocket and missile engineering and involving partners from China's military-industrial complex. The

<sup>&</sup>lt;sup>7</sup> <u>https://archive.vn/hA0tl#selection-697.0-1251.38</u>

<sup>&</sup>lt;sup>8</sup> <u>https://jhai.shu.edu.cn/wrtjs/jh1h.htm</u>

<sup>&</sup>lt;sup>9</sup> https://www.uscc.gov/sites/default/files/Kania Testimony.pdf and

https://www.uscc.gov/sites/default/files/Jonathan%20Ray\_Written%20Testimony\_FINAL.pdf - quote from former

<sup>&</sup>lt;sup>10</sup> <u>https://archive.vn/HKuB7</u> and <u>https://archive.vn/eLKvC#selection-363.0-459.129</u> respectively

<sup>&</sup>lt;sup>11</sup> <u>https://archive.vn/NvdME#selection-459.0-459.195</u>

<sup>&</sup>lt;sup>12</sup> https://thediplomat.com/2020/10/the-plas-new-push-for-military-technology-innovation/

<sup>&</sup>lt;sup>13</sup> The original link address was <u>http://www.imperial.ac.uk/media/imperial-college/administration-and-support-</u>services/secretariat/public/information-governance/Funding-from-chinese-companies-and-institutions-IMPFoI-23-170.pdf; UKCT's copy is at <u>https://ukctransparency.org/wp-content/uploads/2024/02/Funding-from-Chinese-companies-and-institutions-IMPFOI-23-170.pdf</u>

latter set of projects received coverage in the British media in 2022, failed to receive government export licenses, and have since been terminated.<sup>14</sup>

One project also listed is the 'Future Digital Ocean Innovation Centre' (FDOI Centre), the partner being Jari Automation Co., Ltd. China, a part of the Jiangsu Automation Research Institute (JARI).

JARI, also known as the 716 Research Institute, is a subsidiary of China Shipbuilding Group (CSG), the largest Chinese state-owned shipbuilder and the main supplier for the PLA Navy. The Group is subject to US sanctions. JARI describes itself as a "first class military-oriented brand" and specialises in naval military research and development.<sup>15</sup> JARI is the key designer of China's leading range of marine combat drones, the JARI-USV multi-purpose unmanned surface vessel (JARI-USV 多用途无人艇) series.<sup>16</sup>

According to an article posted on Shanghai University's website in 2022, the MDERI teams supervised in part by Xie Shaorong, Guo's long-running collaborator discussed in the last section, have "cooperated closely" (密切合作) with JARI.<sup>17</sup> This is not surprising, as both MDERI and JARI itself are amongst the key players in China's marine combat drone development programmes.

According to an online biography, a leading Imperial data scientist was to be involved as "coinvestigator" in the FDOI Centre collaboration with JARI, a "£3m project".<sup>18</sup> According to Imperial's website, the Director of the Centre was to be another leading Imperial computer scientist,<sup>19</sup> whose recent output includes work on drone swarm synchronisation.<sup>20</sup> There is no intention on the part of UKCT to suggest any impropriety whatsoever on the part of these scientists. There is no evidence either was aware of the military work of JARI or MDERI.

Imperial's website also referred to "a PhD studentship in collaboration with the China State Shipbuilding Corporation (CSSC) and Jiangsu Automation Research Institute (JARI)".<sup>21</sup> CSSC, like JARI, is a subsidiary of China Shipbuilding Group.

It is worth noting here that one of Guo's previous PhD students at Imperial, Yan Shulin 颜舒 琳 was, as of late 2023, serving as Vice-President of a JARI subsidiary, Qingdao Jari Automation Company Ltd 青岛杰瑞自动化有限公司.<sup>22</sup>

<sup>16</sup> See <u>https://www.janes.com/defence-news/news-detail/chinas-csic-expands-unmanned-surface-warfare-portfolio-with-jari-</u> usv, https://navyrecognition.com/index.php/naval-news/naval-news-archive/2023/december/13868-edex-2023-china-s-csicpromotes-jari-usv-a-in-egypt.html, http://www.ship-research.com/cn/supplement/2536df44-6ad7-48da-b196bebd274d8edc, https://news.usni.org/2021/10/11/chinese-testing-experimental-armed-drone-ships-at-secret-naval-base etc. <sup>17</sup> https://web.archive.org/web/2024000000000\*/https://news.shu.edu.cn/info/1012/64544.htm or

https://archive.vn/M41DW

<sup>&</sup>lt;sup>14</sup> https://www.theguardian.com/world/2022/sep/11/imperial-college-to-shut-joint-research-ventures-with-chinese-defencefirms

<sup>&</sup>lt;sup>15</sup> https://web.archive.org/web/20230724135005/http://www.jariauto.cn/Index/AboutUs/Profile/index.htm

<sup>&</sup>lt;sup>18</sup> https://web.archive.org/web/20230811124337/https://premiere.ai/people/

<sup>&</sup>lt;sup>19</sup> https://web.archive.org/web/20210929155027/https://www.imperial.ac.uk/engineering/departments/

 <sup>&</sup>lt;sup>20</sup> https://scholar.google.com/citations?hl=en&user=S6wyzdwAAAAJ&view\_op=list\_works&sortby=pubdate
<sup>21</sup> https://web.archive.org/web/20230316141600/https://www.imperial.ac.uk/data-science/education/phd/

<sup>&</sup>lt;sup>22</sup> Yan has since deleted her LinkedIn account but is named in Chinese media sources as V-P of the company. See https://www.linkedin.com/in/shulin-yan-71063357 She is also listed as a responsible person there on this English-language Capability Maturity Model Integration (CMMI) appraisal record:

https://web.archive.org/web/20240318180107/https://cmmiinstitute.com/PARS/appraisals/63995/details

Images posted on Chinese media (see picture right) in January 2019 show Guo in China signing an agreement with JARI, apparently on behalf of Imperial.<sup>23</sup>

Imperial stated in response to a UKCT FOI request: "There was a single agreement between Imperial College, China Shipbuilding Industry Corporation (CSIC) and JARI covering the PhD studentship programme and the Future Digital Ocean Innovation



Centre. The collaboration did not proceed. In consideration of UK export control legislation and consultation with UK government, Imperial terminated the agreement in March 2021 before any projects started and returned the upfront funding. One export licence application had been submitted for the first scoped project for the Digital Ocean Innovation Centre before the collaboration was terminated."<sup>24</sup>

Imperial told UKCT prior to the publication of this report that "the one licence application made was not withdrawn. It received a 'no licence required' determination from the Export Control Joint Unit, clearing the activity to proceed, but the agreement was terminated following further consultation with the UK government."

UKCT obtained the minutes of a meeting between Imperial and CSG/JARI that took place on the 20<sup>th</sup> of November 2018. Notes on JARI contained in the minutes make no mention of the company's military profile as a "first class military-oriented brand" (see above). The minutes contain the following text:

"(1) Both sides can cooperate on the establishment of the big data center for CSIC's [CSG] scientific research, and the development of scientific research management data model, the extraction and reorganization of massive knowledge, the visualization of data

"(2) Both sides can cooperate by relying on the research of intelligent manufacturing big data application and the common key technologies; unmanned manufacturing, ship manufacturing environment monitoring and its maintenance, mass production data analysis and 3D modeling visualization."

UKCT also obtained details of the proposed collaboration from Imperial in response to an FOI request. UKCT has published the document provided by Imperial in full.<sup>25</sup> It states that: "All the research results will be open for publications and software without proprietary data will be made for public access based on a proper open source licence." It details several projects:

- A project on ocean modelling and forecasting
- A project to develop a deep-learning framework for oceanic data
- A project to integrate, analyse and visualise JARI/CSG's ocean data sets. The description notes that "CSIC/JARI is the owner of world's largest ocean data sets."

https://web.archive.org/web/20240227190413/https://www.sohu.com/a/287767700\_100192743

<sup>&</sup>lt;sup>23</sup> <u>https://archive.ph/uzobi</u> - note that the images do not appear in this archived version of the following webpage: <u>https://www.sohu.com/a/287767700\_100192743</u>. Alternate archive:

<sup>&</sup>lt;sup>24</sup> RE FOI request, IMPFOI-23-629 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-23-629.pdf</u>

<sup>&</sup>lt;sup>25</sup> FOI request, IMPFOI-24-012 [Project details] <u>https://ukctransparency.org/wp-content/uploads/2024/05/FOI-request-IMPFOI-24-012-Project-details.pdf</u>

- A project on use of blockchain for maritime trade documents and data
- Machine learning technology for port logistics

On the face of it, the projects listed are not military research projects. However, as noted further below, an email sent by JARI to Imperial in 2018 – before any agreement was signed – details intended military end uses.

Imperial refused to provide detailed Statements of Work (SoWs) for each of the proposed projects, citing Section 43 (2) of FOI legislation, claiming that providing the SoWs would prejudice Imperial's commercial interests.<sup>26</sup>

#### Guo's work in Jiangsu

In April 2017, Guo founded a company based in Jiangsu called Sulon Big Data 苏伦大数据 ('Sulon', Chinese legal name: 江苏伦敦大数据科技研究院有限公司, lit. Jiangsu London Big Data Technology Institute Ltd.).

In a brochure removed from the internet since the broadcast of the Channel 4 documentary but republished by UKCT, Sulon described itself as "An AI Eco-System Company" of which Guo was founding research director and chairman. In the year of its founding, Sulon was "recognised by Nanjing [Jiangsu's capital] Municipal Government as Nanjing's 1st batch "Innovative Research Institute", it is a new type of Platform to implement Government-Industry-University-Research Cooperation [sic, not translated by UKCT]." In addition, Guo was that year personally named Big Data Consultant to the Jiangsu Provincial Government (江苏省人民政府大数据顾问). Sulon offered educational services, claimed to have coorganised conferences with Imperial's DSI and to have organised a careers fair at Imperial, and advertised its connection to Imperial academics, stating that it "depended" (依托) on Imperial's research strength (see below).<sup>27</sup>



<sup>&</sup>lt;sup>26</sup> RE FOI request, IMPFOI-24-112 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-24-112.pdf</u>

<sup>&</sup>lt;sup>27</sup> Sulon 2019 Brochure https://ukctransparency.org/wp-content/uploads/2024/05/Sulon-2019-Brochure.pdf

UKCT contacted the six specific Imperial academics mentioned, and more than one of them responded. All of those who responded said they had never heard anything of Sulon before. According to Chinese corporate data records, which are not fully accessible from abroad, Sulon is now partly owned by the Chinese government. UKCT has not traced the full ownership history of Sulon.<sup>28</sup>

A post on Sulon's Chinese-language Weibo account from August 2021 states that Guo had received funding from China's national "863 Plan" (the State High-Tech Development Plan 国家高技术研究发展计划), which was launched in 1986 and involved the provision of grants, guidance, etc. to Chinese scientists to help China catch up with the West technologically.

UKCT was not able to find any other source or paper mentioning Guo's involvement in this programme, however, in an interview in Guo himself noted that he was "sent" to Britain by the Chinese government in order to help it "imitate" British computer science technology.<sup>29</sup>

## Huang Ping's role at Imperial

In 2016, Huang worked with the Chinese government to organise a "talent fair" at Imperial college.<sup>30</sup> Guo took part. A video of the event published on YouTube features Huang referring to unmanned drones, and Guo urging Chinese students to "Study hard, study to serve the ancestor-land" (报效祖国).<sup>31</sup>

Huang and Guo travelled to China together in October 2019 upon the invitation of the Chinese government in order to attend celebrations of the 70<sup>th</sup> anniversary of the founding of the People's Republic of China. Huang and Guo later visited the Chinese embassy in London to discuss their experience of the trip with officials. The meeting was filmed, and Christine Lee, named by MI5 as a UFWD agent in 2022, was also present.<sup>32</sup>

According to Imperial, which provided information to UKCT in response to FOI requests, Huang Ping was appointed to the role of "Project Manager (China Collaboration)" in 2019, following a process involving one other applicant. Only Huang was interviewed.<sup>33</sup>

According to a job description provided to UKCT by Imperial, "The overall purpose of this role is to coordinate the operational and research project management of the Lab and develop this into a base for Imperial college and Zhejiang University (ZJU) interaction with other Chinese academic institutes." The description contains no mention of JARI or CSG or the JARI-DSI collaborative project.<sup>34</sup>

<sup>&</sup>lt;sup>28</sup> Any additional information as to the ownership of Sulon will be posted on UKCT's website.

<sup>&</sup>lt;sup>29</sup> "At that time, there was a Fifth Generation Computer Project in the world. Imperial College was the originator of the basic theory of artificial intelligence computing. China wanted to imitate it, so I was sent here to study it." "「当时世界有一个第 五代计算机计划,帝国理工是人工智能计算机基本理论的鼻祖,中国想模仿,我就被送来学这个。」" <u>https://web.archive.org/web/20230905131824/https://gongjyuhok.hk/articles/2609</u>

<sup>&</sup>lt;sup>30</sup> This is covered in UKCT's notes on Huang Ping's connection to the UFWD, see <u>https://ukctransparency.org/wp-content/uploads/2023/11/Notes-on-Huang-Ping-%E9%BB%84%E8%90%8D.pdf</u>

<sup>&</sup>lt;sup>31</sup> <u>https://www.youtube.com/watch?v=DRNCgeRzrKc</u>

<sup>&</sup>lt;sup>32</sup> https://www.youtube.com/watch?v=NHirh5lSfmw

<sup>&</sup>lt;sup>33</sup> RE FOI request, IMPFOI-23-629 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-23-629.pdf</u>

<sup>&</sup>lt;sup>34</sup> RE FOI request, IMPFOI-23-629 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-23-629.pdf</u>

Emails provided to UKCT by Imperial demonstrate that Huang was already working with Guo to organise the JARI-DSI project in what Imperial told UKCT was a "facilitatory" role in late 2018, using an Imperial email address for this. By way of explanation, Imperial told UKCT prior to the publication of this report that Huang "first joined Imperial on a casual worker contract in the summer of 2018."

One email sent to Huang by JARI's head of research in November 2018 states that JARI hoped to have DSI help them to develop data visualisation tools, including for military purposes (namely, for a 'smart military base(s)' 智慧军营).<sup>35</sup> No where in the emails provided to UKCT by Imperial is this phrase translated into English.

In correspondence with UKCT prior to the publication of this report, Imperial stated that: "Nothing in the planned work was to assist with anything military-related."

In another email, Huang offers to help JARI/CSG set up an office or laboratory at a planned Imperial campus in White City (London).<sup>36</sup>

According to Imperial, the JARI agreement was terminated in March 2021.<sup>37</sup> Following this, in October 2021, Huang Ping's role was changed from "Project Manager (China Collaboration)" to "Manager for Events and Education". In response to FOI requests, Imperial have provided UKCT with the business case which explains the rationale behind the change thus:<sup>38</sup>

"The post "Project Manager (China Collaboration)" was recruited to coordinate the operational and research project management of the DSI's China collaboration, including the Zhejiang University (ZJU) Joint Lab and the China State Shipbuilding Corporation (CSSC) Research Centre. Given the CSSC collaboration [the JARI-DSI project] was terminated by the College in early 2021, and the ZJU collaboration ends in early 2022, we propose to change the current job description of the post to meet the needs of the DSI. [...] Responsibilities such as supporting DSI strategy in China collaboration are no longer required."

In correspondence with UKCT prior to the publication of this report, Imperial stated that:

"It is not unusual for a staff member's job description to be altered in response to operational changes, or for them to move to another role within Imperial after changes in operations. As stated in the university's Change Management Policy and Procedure, where changes in operations mean that a member of staff is at risk of redundancy, Imperial has a legal obligation to review redeployment opportunities and offer 'suitable alternative' and/or 'alternative' employment within the university wherever possible. Please see p7 of the policy document: <u>https://www.imperial.ac.uk/media/imperial-college/administration-and-support-</u> services/hr/public/policies/fixedtermworkers/change\_management\_policy.pdf"

<sup>36</sup> RE FOI request, IMPFOI-24-059 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-24-059.pdf</u>

<sup>38</sup> Role change 'Business Case' https://ukctransparency.org/wp-content/uploads/2024/05/Role-change-Business-Case.pdf

<sup>&</sup>lt;sup>35</sup> RE FOI request, IMPFOI-24-059 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-24-059.pdf</u>

<sup>&</sup>lt;sup>37</sup> RE FOI request, IMPFOI-23-629 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-23-629.pdf</u>

As of April 2024, Huang is now responsible for summer and winter schools at the DSI that attract a significant number of participants from China. According to Imperial, the schools raised £132,739 in 2021/22 and £207,840.00 the next year. In the year 2023/24 to date, they have raised £220,932.<sup>39</sup>

According to an Imperial webpage describing the school's 2024 programme, those wishing to take part should email a Googlemail address, contact a WeChat account, or call one of two Chinese mobile numbers. The page also notes that scholarships of up to £600 are available from "Global University Online",<sup>40</sup> a Hong Kong company.<sup>41</sup> A website for GUO Global University Online states that "All students are expected to be studying an undergraduate degree in any engineering discipline, IT or computing degree at a well-recognised university in China."<sup>42</sup>

#### Guo's affiliation with Imperial

At some point between the 1<sup>st</sup> of November and the 11<sup>th</sup> of December 2023, the DSI's website was changed to remove reference to Professor Guo as "co-director" of the DSI. (The Channel 4 documentary aired on the 29<sup>th</sup> of November.)<sup>43</sup>

The DSI's 2022 annual review released in December 2022 made no reference to Guo leaving the DSI or abandoning his relationship with it. In the report, Guo is described as the DSI's "Co-Director", and as a member of a team from DSI with respect to an award that team had won in December 2022.<sup>44</sup>

In correspondence with UKCT, Imperial initially avoided the question of when Guo's affiliation with Imperial ended and when his work at the DSI ceased. Imperial told UKCT that "Professor Guo left Imperial College London in 2022" and that as of February 2024, "he no longer has an association with Imperial." Asked when Guo ceased "to work in any capacity as director or co-director of the Data Science Institute", Imperial initially stated that "the information that you are requesting is personal data relating to an individual's contract, which we are not able to disclose." Pressed further, Imperial stated: "Prof Guo ceased to work at the DSI, and his role there formally ended, when he left Imperial in 2022. We're not able to give further detail about his contract as this is personal data."<sup>45</sup>

Guo continued to refer to his affiliation with Imperial on his academic papers through 2023. For example, in October 2023, Guo, an Imperial scientist, and two others published a paper

<sup>&</sup>lt;sup>39</sup> RE FOI request, IMPFOI-23-629 <u>https://ukctransparency.org/wp-content/uploads/2024/05/RE-FOI-request-IMPFOI-23-629.pdf</u>

<sup>&</sup>lt;sup>40</sup> https://web.archive.org/web/20231101232900/https://www.imperial.ac.uk/continuing-professional-development/shortcourses/summer-schools/summerschool/imperial-data-science-summer-school/

<sup>&</sup>lt;sup>41</sup> In correspondence with UKCT, Imperial confirmed that GOU is headquartered in Hong Kong. It is a subsidiary of a Chinese company.

<sup>&</sup>lt;sup>42</sup>https://web.archive.org/web/20220524035418/http://www.globaluniversityonline.org/hqdx.php/course\_master/detail/52.ht ml

<sup>&</sup>lt;sup>43</sup> https://web.archive.org/web/diff/20231101214551/20231211113135/https://www.imperial.ac.uk/data-science/who-weare/meet-the-team/

<sup>&</sup>lt;sup>44</sup> <u>https://www.imperial.ac.uk/media/imperial-college/data-science-institute/DSI-Annual-Report-2022-(4)-compressed-(1).pdf</u>

<sup>&</sup>lt;sup>45</sup> Email chain re Guo association with DSI <u>https://ukctransparency.org/wp-content/uploads/2024/05/Email-chain-re-Guo-association-with-DSI\_Redacted.pdf</u>

on the use of AI to assimilate sensor data. Guo listed one affiliation: with the DSI at Imperial.  $^{46}$ 

In final correspondence with UKCT prior to the publication of this report, Imperial stated that: "The annual review and the website were not updated appropriately, but this was the result of human error and not as a result of any deliberate dishonesty or attempt to mislead, as implied in the draft report. The fact remains that Professor Guo left Imperial, and his association with the DSI ended, in 2022. It is not unusual for academic papers to be written up and published sometime after a study has concluded, or for a researcher to credit the institution where they conducted the research in the relevant academic paper, if they have since left that organisation."

#### Response from Imperial

Imperial were contacted prior to the publication of this report to provide factual comments on a draft version of it. An Imperial spokesperson also provided a formal response, as follows: "Imperial is committed to open scientific research, open intellectual exchange, academic freedom and the free flow of ideas and people — all of them essential for UK universities to remain at the global forefront of research, education, and innovation. International collaboration is at the core of our research and our academics have forged collaborations in over 190 countries.

"Imperial takes its national security responsibilities very seriously. We regularly review our policies in line with evolving government guidance and legislation, working closely with the appropriate Government departments, and in line with our commitments to UK national security.

"Under Imperial's policies, partnerships and collaborations are subject to due diligence and regular review, and clear research codes of practice apply to all staff at Imperial. It is as a result of this approach that the Imperial projects discussed in this report either did not go ahead or were closed down. Imperial's research is open and routinely published in leading international journals and we conduct no classified research on our campuses."

<sup>&</sup>lt;sup>46</sup> <u>https://www.sciencedirect.com/science/article/pii/S0021999123006769</u>

# Appendix 1.

Papers related to marine combat drones authored by Guo Yike and Xie Shaorong, ordered by publication date:

- 03/12/2019 'Collaborative Defense with Multiple USVs and UAVs Based on Swarm Intelligence'<sup>47</sup>
- -/09/2018\* 'The Multiple Unmanned Surface Vehicles Cooperative Defense Based on PM-PSO and GA-PSO in the Sophisticated Sea Environment'<sup>48</sup>
- -/09/2017\* 'The Cooperative Defense System by Team of USVs in Complicated Sea Environment'<sup>49</sup>
- 21/05/2020 'The autonomous navigation and obstacle avoidance for USVs with ANOA deep reinforcement learning method'<sup>50</sup>
- -/09/2019\* 'The Collaborative Strategy of Multiple USVs with Deep Reinforcement Learning Method'<sup>51</sup>
- 26/08/2018 (online) 'Attacking Strategy of Multiple Unmanned Surface Vehicles Based on DAMGWO Algorithm'<sup>52</sup>
- -/09/2017\* 'The Cooperative Defense Strategy by Multi-USVs'<sup>53</sup>
- -/09/2017\* 'The Combat of Unmanned Surface Vehicles Based on Wolves Attack'<sup>54</sup>

\*All of the papers marked with an asterisk were presented at one or other iteration of the annual International Conference on New Trends in Intelligent Software Methodology Tools, and Techniques SoMeT. This typically takes place at Japan in September. UKCT did not establish exactly when the conference papers were published.

<sup>&</sup>lt;sup>47</sup> https://web.archive.org/web/20230619121218/https://link.springer.com/article/10.1007/s12204-019-2142-y

<sup>&</sup>lt;sup>48</sup> https://web.archive.org/web/20230619170012/https://ebooks.iospress.nl/volumearticle/49987

<sup>&</sup>lt;sup>49</sup> https://web.archive.org/web/20230619170329/https://ebooks.iospress.nl/volumearticle/47618

 <sup>&</sup>lt;sup>50</sup> https://web.archive.org/web/20230619170818/https://www.sciencedirect.com/science/article/abs/pii/S0950705119305350
<sup>51</sup> https://web.archive.org/web/20230619170809/https://ebooks.iospress.nl/DOI/10.3233/FAIA190047

<sup>&</sup>lt;sup>52</sup> https://web.archive.org/web/20230619172641/https://link.springer.com/chapter/10.1007/978-3-030-00060-8 10

 <sup>&</sup>lt;sup>53</sup> https://web.archive.org/web/20210101044338/http://ebooks.iospress.nl/publication/47617

 <sup>&</sup>lt;sup>54</sup> https://web.archive.org/web/20201228221846/http://ebooks.iospress.nl/publication/47616