ZIYE HONG (洪梓烨)

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EDUCATION

2017.9-2021.6 **SUN YAT SEN UNIVERSITY**

- Major: Aeronautical and Astronautical Engineering
- Bachelor of Engineering, *due in June 2021*
- Cumulative GPA: 85/100
- Scholarship based on Outstanding Academic Performance for 3 consecutive years

2021.9-2022.7 **SHENZHEN INNOX ACADEMY**

- **Courses** jointly taught by Hong Kong University of Science and Technology, Southern University of Science and Technology, Cheung Kong Graduate School of Business and industrial experts**: Robotic System Design**, **Internet of Things and Mobile Awareness**, **Basic Sensor Principle and Technology**, Design Thinking, Entrepreneurship, etc
- On-site Visit to Industrial Plants: Sinocare Healthcare, Hai Robotics, Pony.AI, etc
- Full financial support

PUBLICATION & PATENT

✓ Wei Zhang, **Ziye Hong**, Jianing Wu, Zhigang Wu. A Bionic Comb Device for Cleaning Flexible Column. CN202010846745.5. November 2020

✓ **Ziye Hong**. Prediction of 2019-nCoV Epidemic by Linear Regression Model. *ACM ICPS*. ISBN: 978-1-4503-8860-3. July 2020

✓ Chihang Liu, Hao Luo, Hui Cheng, **Ziye Hong**, Runtao Liu. A novel chassis-detachable storage and output sphere. CN202020242466.3. May 2020

PROJECTS & CONTESTS

2022/05-2022/07 **Unmanned Street Sweeper Simultaneous Localization and Mapping**

Supervisor: Dr Xianliang Wu from DJI.

- Write a ROS Publisher and Subscriber to collect Camera, Lidar and IMU data from Unmanned Street Sweeper
- Realize the Simultaneous Localization and Mapping function by using ORB-SLAM3 and LIO-Livox

2021/09-2021/12 **Intelligent Wheelchair with Aided-Driving Technology**

Supervisor: Prof. Zexiang Li and Prof. Shaojie Shen from Hong Kong University of Science and Technology

- Learned the fundamental courses of Robotic System Design and propose a wheelchair that can follow users when they want to take a walk
- An WHILL electric wheelchair was refitted and equipped with a Realsense D435i camera and Jetson TX2 Module
- Target detection and tracking by using YOLO V5

2021/07-2021/08 **XbotPark2021 Intelligent C-Terminal Scientific Innovation Camp**

Supervisor: Prof. Zexiang Li from Hong Kong University of Science and Technology

- Learned the fundamental courses of product design and visited the robot production lines at DJI-Innovations, 3irobotix, etc.
- Designed independently and produced a safe fishing-aid bait adding solution
- Earned 2nd prize in the summer camp

2021/01-2021/06 **Advanced Technology Research Institute *MicroLab* of Sun Yat-sen University**

Supervisor: Prof. Tianjiang Hu

- Achieved target detection on the UAV fuselage key points by Convolutional neural network (modified YOLO algorithm) in Linux system
- Recorded the sequence charts of the UAV fight tests, obtained the labeled dataset with LabelImg

- Adopted two attitude estimation algorithms based on PnP to compare the accuracy and speed: EPnP method and POSIT iterative algorithm
- Summarized the findings in academic writing and earned the honor of "Excellent Thesis Work"

2020/2-2020/06 **Prediction of 2019-nCoV Epidemic by Linear Regression Model**
Supervisor: Dr. Rakesh Kumar, University of Illinois Urbana Champaign, USA

- Attended the online course on Artificial Intelligence
- Adopted Python to glean data about 2019-nCov Epidemic from January to February, such as the number of infected patients, deaths, infection rate, mortality, and visualized the data on the basis of province categorization
- Predicted the mortality of different provinces via linear regression model learned from the course, ameliorated the existing model after the existing mortality as the second variable and obtained more accurate prediction
- Conducted academic writing and presented the work on ACM ICPS

2019/6-2020/01 **Intelligent Bionic Robot Lab** *supervised by Associate Prof. Jianing Wu*

- Detected the bee's behavior of tentacle cleaning via high-speed camera, further observed the secondary structure, and measured the parameters of the structure via confocal laser scanning microscope
- Designed and manufactured the cleaning structure in SolidWorks and 3D printer, measured the force of friction and cleaning efficiency by a sensor
- Concluded that the cleaning structure with secondary structure are with greater force of friction and higher cleaning efficiency

2019/05-2019/11 **Matlab Cup Unmanned Aerial Vehicle (UAV) Contest** *Chief Member*

- Received systematic training in UAV control system and image recognition technology
- Programmed in MATLAB SIMULINK to carry out the image recognition

2018/01-2019/06 **RoboMaster Youth Tournament** *Chief Member*

- Assumed as the chief engineer to take in charge of the mechanical design of the robot via SolidWorks, Ansys structure analysis, 3D printing and metal processing techniques, and the testing of the electronic control
- Led the team to win multiple honors in the national contests, including *Superior Appearance Design*, conducted academic writing and won the patent authorization

2018/10-2019/04 **Software Innovation Contest of SYSU** *Chief Member*

- Developed WeChat mini program via WeChat developer toolkit, stored data via Ali cloud server
- Achieved the image transmission in TeamViewer from UAV to mini program of the users
- Earned 2nd prize in the University contest and the Best Popularity Award

2018/01-2018/06 **The Challenge Cup Business Plan Contest for National College Student** *Team Leader*

- Proposed the innovation of shared UAV for aerial photo, and teamed up to carry out the project
- Design the overall business plan and the demonstration of proposed software production
- Earned 3rd Prize

2016/06-2016/12 **The Dynamic Analysis of Writing Brush Furcation Phenomenon Based on Experiments**
Supervisor: Associate Professor Qinghe Yao, Dr. Wenhao Cai from Sun Yat-sen University

- Established physical model and carried out verification experiments on writing brush furcation
- Visualized the experimental data in Matlab and verified the model
- Summarized the finding in academic writing and published on the Yau Mathematical Sciences Center, Tsinghua University
- Earned the honor of the Global Gold Award in the Shing-Tung Yau Physics Contest for Middle School Students

PROFESSIONSL SKILLS

Programming Language: Fortran, C, Python, MATLAB
Professional Software: Visual Studio, Pycharm, MATLAB, ROS, SolidWorks, Adams, Proteus, Ansys (ICEM, cfd++)