

# Yuwei Yan

## Contact Details

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## Education

- University of Manchester **Sept. 2020-Dec. 2021**  
*Master of Mechanical Engineering Design* GPA: 78.83% Rank: Top 3%
- Beijing Institute of Technology **Sept. 2016-Jun. 2020**  
*Bachelor of Weapon Launch Engineering* GPA: 87.25% Rank: Top 15%

## Work Experience

- School of Biomedical Engineering, University of Sydney **Feb. 2024-Oct. 2024**  
*hBMS Lab-Research Assistant*
- FiberHome Telecommunication Technologies Co., Ltd. **Jan. 2022-Apr. 2024**  
*User Experience Designer-Mechanical Design Engineer*

## Research Outputs

- Silva J, **Yan Y**, Cho AN. In Vitro Retinal Model for Disease Modelling and Therapeutics Study. *International Journal of Molecular Sciences*. 2024; *Under Review*.
- **Yan Y**, Cho AN. Human Brain In Vitro Model for Pathogen Infection-Related Neurodegeneration Study. *International Journal of Molecular Sciences*. 2024;25(12):6522-6522. DOI: <https://doi.org/10.3390/ijms25126522>
- Wang J, Chen Y, Lan X, **Yan Y**, Li J, Zhang Y. Modularized Deformable Unmanned Aerial Vehicle Structure. 2022;(CN113104213B). Accessed July 5, 2022. <https://patents.google.com/patent/CN113104213B/en?q=CN113104213B>
- Wang J, Chen Y, Lan X, **Yan Y**, Li J, Zhang Y. Control Method of Modular Deformable Aircraft. 2022;(CN113253753B). Accessed September 9, 2022. <https://patents.google.com/patent/CN113253753B/en?q=CN113253753B>

## Projects

- Human Pancreatic Organoids for Type I Diabetes Modelling **Jul.2024-Oct.2024**  
*Role: Researcher* Work: Summarize reagents and antibodies used in cell differentiation and organoid cultivation; Organized medium reconstitution for protocols; Filtered antibodies for immunostaining.
- In Vitro Retinal Model for Disease Modelling and Therapeutics Study **Jun.2024-Sept.2024**  
*Role: Researcher* Work: Conducted the literature review of optical physiology including retinal cells and function, animal models on common retinal diseases, 2D retinal cultures used in therapeutic screening.
- Human Brain Micro-Physiological Platform for Virus Infection Modelling and Treatment Screening **Feb. 2024- Oct.2024**  
*Role: Researcher* Work: Designed the microfluidics platform for cerebrospinal fluid containing brain organoids; Manufactured by PDMS lithography and 3D printing technology; Conducted fluid simulation.
- Structural Design of A 10G PON Home Gateway **Sept. 2022-Apr. 2024**  
*Role: Engineer* Work: Designed the internal structure of shells, compatible with 7 PCBs; Designed the heatsink for CPU and shielding cover for BOSA module; Conducted FE analysis for drop test in Abaqus.
- Structural Design of A Vertical Home Gateway **May. 2022-Mar. 2024**

*Role: Engineer      Work: Designed the base bracket and internal structure of shells, compatible with 4 PCBs; Design the heatsink for WiFi module; Standardized the test methods for LED brightness.*

- **Dual-Chamber Bioreactor for Bone and Cartilage Tissue** **Dec. 2020-Dec. 2021**

*Role: Researcher      Work: Designed a bioreactor with pistons for the interface of two different types of tissues; Conducted the FE analysis in Fluent for scaffolds of different porosity in bioreactor.*

- **Jumping Rover for the Extreme Environment** **Nov. 2020-May. 2021**

*Role: Coordinator      Work: Designed the rover chassis structure; Reduced the weight by conducting the topology analysis in Ansys; Designed the intermittent transmission mechanism for stepper motor.*

- **Vertically Driven Double Parallelogram Configuration of Embedded Ejection Device** **Jan. 2020-May. 2020**

*Role: Researcher      Work: Analyzed the multi-body dynamics of the scheme and optimized the position in Adams; Designed the 3D structure of the ejection device and conducted the FE analysis for the strength.*

- **Modular Assemblable Multi-Rotor UAV** **Oct. 2017-Jun. 2019**

*Role: Manager      Work: Designed the rack structure for single-module and reduced the weight for UAV; Designed the hinge-slideway mechanism for different assemble conditions; Composed the patents.*

- **Micro-UAV System with Inspection and Response Functions** **Jun. 2017-Sept. 2017**

*Role: Manager      Work: Designed the fuselage truss, door buckle and rebound mechanism; Analyzed the structural strength for the folding mechanism in Ansys; Optimized the airfoils and wings in XFLR5.*

- **Aircraft with Joined-Wing Configuration** **Apr. 2017-May. 2017**

*Role: Designer      Work: Designed and modeled the joined-wing structure; Conducted the FE analysis for velocity, pressure and turbulence conditions in Fluent; Designed the rotatable airfoil mechanism.*

## **Awards**

- Faculty of Engineering Research Scholarship for the HDR Student of USyd **Nov. 2023**
- First prize of Quality Control Circle Outcomes Presentation of 2023 of FiberHome **Sept. 2023**
- Outstanding Academic Achievement: Taught for MSc Mechanical Engineering Design of UoM **Dec. 2021**
- Excellent Student Scholarship for four consecutive years (2016-2020) of BIT **Jun. 2020**
- Chinese Government Scholarship for the Exchange Student of Mississippi State University **Jun. 2019**
- First prize of the 10th Challenge Cup-Capital College Technological Production Competition **Jun. 2019**
- Grand prize of the 15th Century Cup-College Technological Production Competition of BIT **May. 2018**
- Science and Technology Competition Scholarship for 2017-2018 Academic Year of BIT **May. 2018**
- Grand prize of the 7th Aircraft Innovation Competition of BIT **Jan. 2018**
- Innovation prize of the 5th International UAV Innovation Grand Prix **Nov. 2017**
- First prize of China Aeromodelling Design Challenge **Sept. 2017**
- Third prize of the 14th Century Cup-College Technological Production Competition of BIT **May. 2017**
- Excellent Social Investigation Individual in the Winter Social Practice **Apr. 2017**

## **Skills**

**Modeling:** Creo, AutoCAD, SolidWorks, CATIA

**Analysis:** ANSYS, ABAQUS, ADAMS

**Programming:** C, MATLAB, LabVIEW

**Languages:** English, Chinese

**Industry Knowledge:** Quality Control, Statistical Process Control, FEMA, 6 Sigma, TRIZ

## **Test Scores**

GRE: 325/3.5

IELTS: 7.5

## **Research Interests**

Microfluidics, Medical Robots, Wearable Biosensors, Bioprinting, Bioreactor, Brain-Computer Interfaces