



**Chongqing University
Aeromodelling Team**



Powered By
**Interdisciplinary
Innovation Center**

Chongqing University Aeromodelling Team Profile

September 2025



Image provided by: Liu Chengwei, Founding Member of the Chongqing University Aeromodelling Team

Platform for Excellence

The China University Aircraft Design Competition is our arena. Each successful mission and breakthrough not only brings team recognition but also provides members with invaluable, career-shaping practical experience in the aerospace domain.

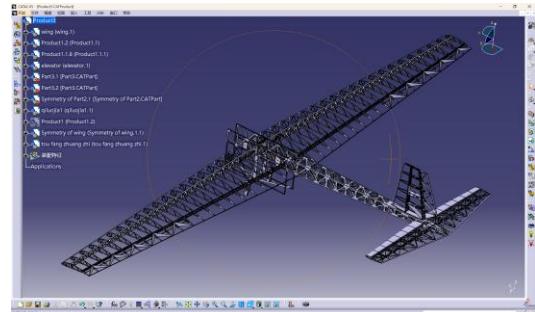
Interdisciplinary Synergy

We bring together students from diverse majors to tackle complex aircraft design and manufacturing. Our work integrates aerodynamics, structural, and flight control expertise with cutting-edge knowledge to create innovative solutions for demanding challenges.

High-Fidelity Environment

Leveraging our low-speed wind tunnel, advanced processing equipment, and professional CAx software, we enforce "simulate first, verify by experiments" process. This approach refines every design, empowering us to turn blueprints into products.

CUADC Championship



Designs and analyzes UAV structure using composite materials. Employs mechanics and simulation software (Abaqus, Isight, Fluent) to ensure a lightweight, high-strength fuselage capable of safely completing missions.

Flight Control Engineer

Develops flight control systems using high-precision RTK positioning technology.

UAV Precision Airdrop

Challenge your precise control! Design a heavy-lift UAV to execute a perfect, accurate airdrop. Success belongs to the steadiest and most precise team.

Power System Engineer



Develops, tests, and improves the internal combustion engine for optimal efficiency, performance, and reliability.

Structural Design Engineer

Multi-rotor UAV Reconnaissance and Rescue



Your multi-rotor UAV transports vital supplies in a simulated disaster area. Use your design to inspire hope!

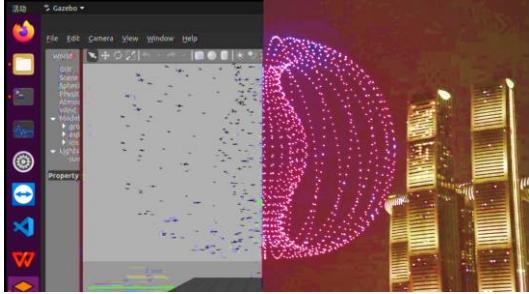


Mechanical Design Engineer



Designs and manufactures the UAV structure using additive manufacturing, CNC, and sheet metal processes. This includes creating a highly reliable payload deployment system for precise airdrops.

Flight Control Engineer



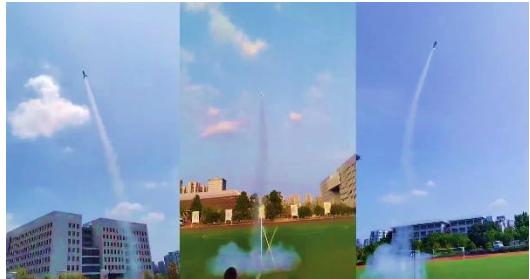
Develops UAV control algorithms based on ROS2 and Pixhawk 4. Integrates data from multiple sensors (IMU, RealSense) and uses algorithms (machine learning, PID) for precise UAV control.

Electrical/Communication Engineer

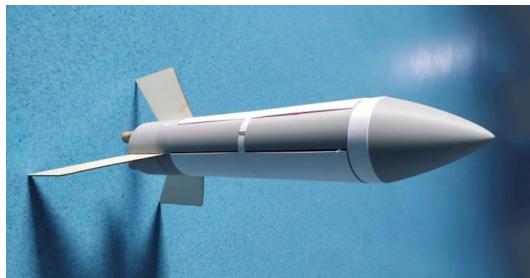
Manages network communication between the flight controller, host computer, and ground station.



Aerospace Rocket Launch and Return

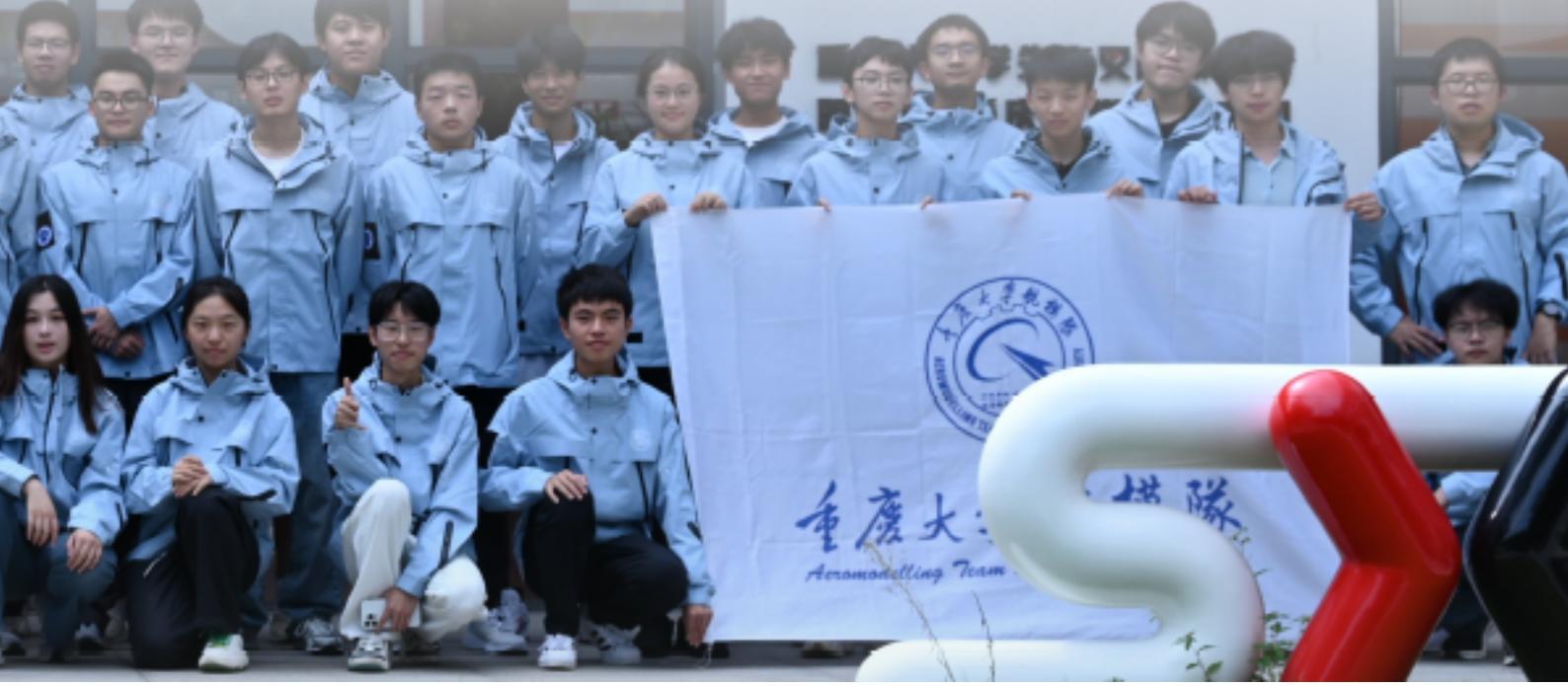


Rush to space, return safely! Build a model rocket capable of successful launch and safe recovery. This is a tribute to aerospace dreams.
Mechanical Design Engineer



Electronic Control System Engineer

Develops the rocket's flight control system and algorithms. Integrates pressure sensors to achieve autonomous parachute deployment and precise recovery at a planned location.



Glider Engineer



Designs a foldable glider, built into the rocket, to achieve stable, controllable, and precise recovery.

Fixed-wing UAV Reconnaissance and Strike



Become an aerial scout! This requires strategic and technical mastery: precise identification and decisive engagement.

Structural Design Engineer

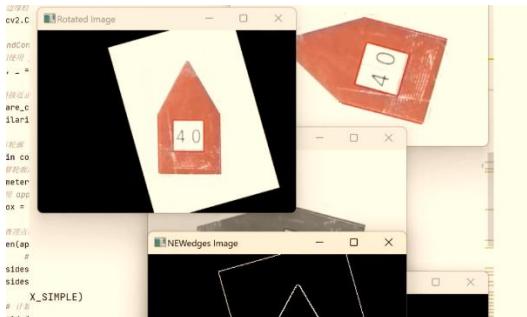


Uses software like SolidWorks for fuselage design and foldable structure design to ensure the UAV is lightweight and robust.

Flight Control Engineer

Uses flight control systems (APM) and ground station software (Mission Planner) to develop and debug flight control algorithms. Achieves precise autonomous flight for reconnaissance and strike missions.

Visual Algorithm Engineer



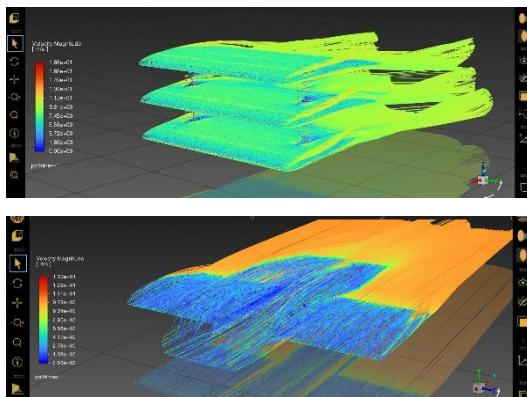
Uses deep learning frameworks (YOLO, PyTorch) to develop object recognition and tracking algorithms. This enables the UAV to autonomously identify targets and provides visual support for precise strikes.

Short Takeoff and Landing



Small space, infinite possibilities! Your UAV must achieve takeoff and landing on the shortest runway.

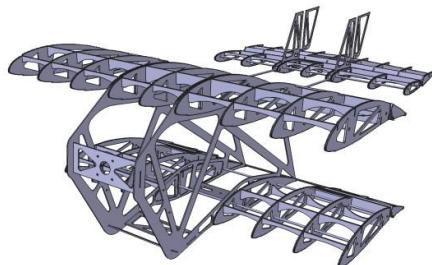
Aerodynamic Design Engineer



Uses fluid simulation software (Fluent) and modeling tools (Catia) for aerodynamic shape

design. Verifies the aircraft's lift and drag performance through wind tunnel testing.

Structural Design Engineer



Employs processes like laser cutting to convert blueprints into lightweight, high-strength components.

Flight Operator

Primarily responsible for visual flight during missions. Manually operates the aircraft via remote control to ensure stable, safe takeoff, landing, and mission execution in complex environments.

CQU Aircraft Design Competition

This annual competition aims to popularize aircraft knowledge, enhance students' comprehensive abilities, and provide a high-quality platform for aeromodelling exchange and practical innovation.



The annual competition features diverse content:

Flight Simulation Challenge: Tests participants' control skills and theoretical knowledge.

Multi-rotor UAV Mission Flights: Challenges mission planning, teamwork, and tactical decision-making.

Aeromodelling Electric Paper Planes: Encourages innovation in aircraft design and manufacturing.



Exchange with Civil Aviation Flight University of China

On October 20, 2024, the CQU Aeromodelling Team visited the Tianfu Campus of the Civil Aviation Flight University of China.



The exchange, which included laboratory tours, indoor UAV formation displays, flight technology discussions, and a visit to the Tianfu Jiangxi Laboratory, deepened understanding and laid a foundation for future cooperation in research and talent development.

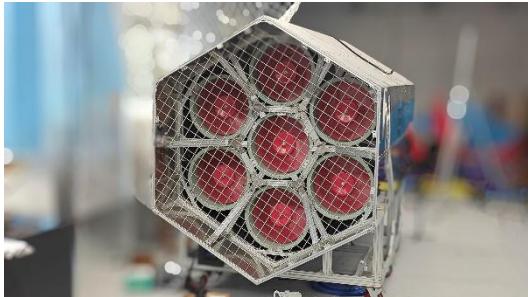


Professional Equipment

Low-Speed Wind Tunnel

Location: DCX203 Laboratory

Simulates low-speed airflow movement for objects like aircraft and measures their aerodynamic characteristics.



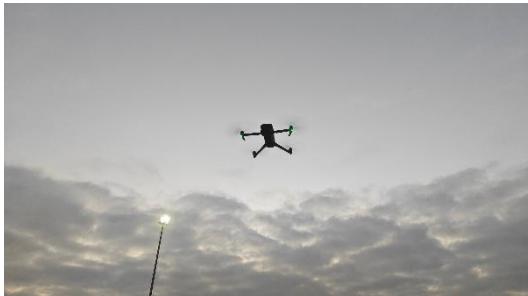
Laser Cutting Machine

Location: Manufacturing Center

Uses high-energy-density laser beams for non-contact cutting, offering high precision, speed, and smooth cuts.

DJI MAVIC 3 Pro

Features a triple-camera system (Hasselblad main, medium, and long telephoto lenses) for diverse creative angles and excellent image quality.

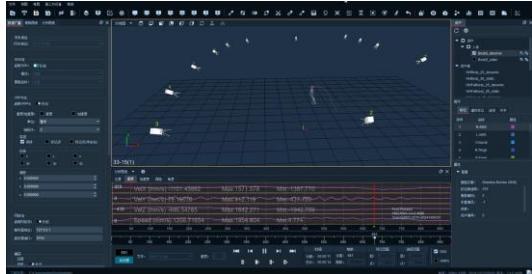


NOKOV Motion Capture System

Location: DCX203 Laboratory

An optical 3D motion capture system. Multiple infrared cameras track reflective markers for real-time, high-precision capture of position and attitude in 3D space. Widely used in robot

localization, animation, and movement analysis.



Bambu Lab X1C Printer

Location: DCX203 Laboratory

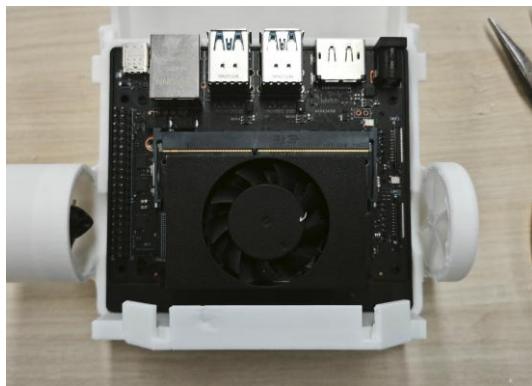
Integrates multi-color printing and AI assistance for automatic calibration and error identification. Simplifies the printing process, ideal for high-precision, automated use.

NVIDIA RTX 4090 HPC

Location: DCX203 Laboratory

Features RTX 4090 graphics card. Smoothly runs fluid dynamics simulation (e.g., Fluent), large games (e.g., Microsoft Flight Simulator), and provides powerful computing for ROS (Robot Operating System) development.

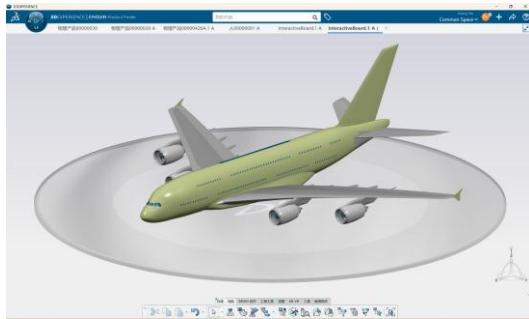
NVIDIA Jetson Nano



A powerful embedded AI development board. Brings GPU parallel computing to a compact device, suitable for running various AI models in robotics, UAVs, and smart IoT devices.

Dassault Systèmes CATIA

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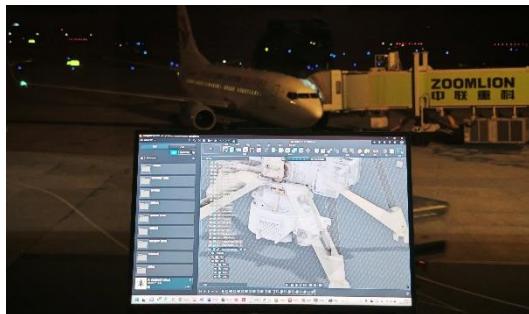


An integrated platform combining CATIA's powerful 3D modeling and design with project management, collaboration, and data management. Provides a comprehensive, cloud-based environment for engineers and designers.

Efficient Collaboration

We use advanced tools and processes to ensure efficient teamwork.

Autodesk Fusion Enables full product lifecycle management. Allows remote team members to collaborate seamlessly on design with real-time updates..



GitHub (VCS) Ensures every code change is tracked, facilitating synchronized development and conflict avoidance.



Docker Used for containerized deployment, simplifying environment setup and ensuring

efficient, consistent development, testing, and deployment.

Comprehensive Computer-Aided Design Coverage

We provide licenses for multiple CAD software to suit different design needs.



Certified SolidWorks Professional

CATIA Offered for complex surfacing and high-end engineering design. Widely used in aerospace and automotive industries for streamlined shapes and large assemblies.

Fusion Valued for cloud collaboration and its integrated workflow, seamlessly combining modeling, simulation, and manufacturing. Ideal for projects requiring remote team synergy.

Simulation and Testing

Simulation is the design testbed, allowing virtual verification to rapidly reduce cost and risk.

Experimentation validates simulation results, enabling model correction to address real-world complexity.

Welcome!

We believe in the unique perspective and talent of every team member. We encourage you to transform bold ideas into reality. Your attempts and breakthroughs become the team's exclusive asset. Join us: use your uniqueness to create our exclusive technology and define the future of flight together!



The butterfly counts not months but moments,
and has time enough.



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Powered By
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