

# JIAXUAN TANG

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## EDUCATION

### Imperial College London

Master Of Engineering/MEng

Aeronautical Engineering/College of Engineering

October 2018 - Present(June 2022)

High Second First Degree(Honour)

## SKILLS/COURSES

### Software Skills

C, MATLAB(Simulink), JavaScript, Python, Linux, SOLIDWORKS, Creo, Office  
Cadence, Fusion 360, PLC, Intel Quartus FPGA, Abaqus, VBA, Java

### Main Courses

Thermodynamics, Aerodynamics, Mathematics, Finite Element, systems & signals  
Structural Analysis, Computation Fluid Dynamics, Engineering design, Computing  
Control Theory, Numerical Analysis, Engineering Design, Engineerign Management

## WORKING EXPERIENCE

### Huawei

*Simulation Algorithms Engineer*

Sept 2022 - Present

*Dongguan*

- Working in the CBG department, simulation lab, using ansa and fluent to do the meshing process on the single fan which will do volume and aeroacoustic simulation. Developed the program which can automate the process of the meshing and solver, speed up the time by 80%.
- Using C++ to develop the computational fluid dynamics solver. Currently the solver can work on simple geometry problem with incompressible fluid. Currently working on the development of aeroacoustic part with compressible fluid.

### Coohom

*Geometry Algorithms Intern*

June 2021 - September 2021

*Shanghai*

- Working in Geometry middle ground group simulation scrum team's code modules including finite element on structure and heat diffusion and computational fluid dynamics. Used Java to realize the interpolation on middle-end post process on data from the solver. Used iso-parametric element to realize fast and efficient mesh searching. Also developed the algorithms to extrapolate the value from integration points to node points for various kinds of elements, increasing the accuracy of calculation to the same level as Abaqus.
- Fixed lots of bugs like making the support to the true cylindrical curve and continuous lines. Supported the development of the acoustic module including the coupling of multiple rooms.

### Bosch

*Engineering Test Intern*

March 2021 - June 2021

*Suzhou*

- Worked in Engineering Test Lab and was responsible for different tests on automobile electronics like ECU and ESP including temperature shock test, humidity test etc using LabView. Used VBA to do data analysis on the facilitate cost, realized fully automated data process.
- Worked on the automation project of PCB test. Designed the mechanical structure using AutoCad and whole process. Used PLC to realize automated procedure. The project was estimated to help saving £10k annually.

### Beckman Coulter - Danaher Corporation

*Mechatronics Engineering Intern*

April 2020 - September 2020

*Suzhou*

- Worked in the HW(Hardware) team of CDC(China Development Center) and draw the 2D and 3D diagrams on different parts of the medical devices. Used SOLIDWORKS to edit and improve the pipe diagram to make it more clear and convenient for the service team.
- Used Cadence to design the PCB in order to test the cable's reliability. Realized fully automation test. Used FPGA and PLC to test different PCBs and found over 3 bugs before the installation.

### Sinopec Corporation

*Engineering Intern*

August 2019 - September 2019

*Suzhou*

- Worked in the Construction & Development Department, helped engineers to modify the CAD of different oil stations. Gave safety advice to the retrofit of oil stations, monitored and successfully finished 5 oil stations' retrofit.
- Used VBA to analyze the data of stuff cost using VBA, increasing the efficiency up to 50% using functions enabled GUI buttons.

## EXTRACURRICULAR EXPERIENCE AND PROJECTS

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### Reconstruction of higher order surface using triangulation

September 2021

- Supervised by Professor Peiro Joaquim and working on mesh subdivision on various surfaces and models. Implemented several subdivision scheme using Java and export in different file formats. The model with surface mesh is directly used in computation aerodynamics to see the performance compared to the real model.
- The thesis then compared performance of different subdivision schemes in terms of smoothness, accuracy and feature preserving ability. According to thier performance, they are recommended under different scenarios.

### Group Design Project

May 2021 - June 2021

- Worked in the consultancy team for Imperial Racing Green to design the vehicle for Shell-Eco Marathon Competition. Worked in the sensor study part to select different sensors which were necessary to the vehicle. Also used the Matlab Simulink to design the models for DcDc converter and battery management system to realize PID motor control and SOC(state of charging and discharging) calculation.
- Worked with the vehicle dynamics team to help integrate the electronics into the lap simulator for better estimate of the car performance. Worked with CAD team to integrate the electronics into the chassis to ensure better ergonomics. Won high praise from Imperial Racing Green and was invited to join the team.

### Aerial Vehicle Design

November 2020 - March 2021

- In conceptual stage, used Solidworks to design the baseline layout of the whole plane.
- In preliminary stage and detailed design, used Matlab to solve the wing loading cases and finish the spar design. Used Ansys and Abaqus to do the topology optimization on wing flap structure and finite element analysis, saved the mass from 1500g to around 300g.

### Computational Fluids Dynamics Project

December 2020 - January 2021

- Wrote the Matlab code to solve the Helmholtz equation using both iterative method which is the steepest iterative method for trigonal system and Thomas algorithm which is  $O(N)$  time complexity using Dirichlet boundary conditions. Also solved the Diffusion equation using backward Euler scheme with Dirichlet and Neumann boundary conditions using Thomas algorithm, made a 3D mesh plot. Also using flux splitting method to solve the one dimensional shock problem by calculating numerical solution.

### Imperial College Aerial Vehicle

2018 - 2020

- Worked in system group to build the UAV which attends competition held by Institute of Mechanical Engineers, using ROS Gazebo to do simulation and flight planning. The electronic layout and pixhawk setup helped our team get the highest mark in the 1st round, 2019.

## AWARD/CERTIFICATES

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### Aeronautics Scholar Coursera

Awarded by Imperial College London for Excellent Academic Performance. -2020  
Algorithms ToolBox, Interactivity with Javascript, Using Databases with Python,  
Data Collection and Processing with Python, Python with Data Structures.

## LANGUAGE ABILITY

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**Chinese** Native Speaker

**English** Full professional proficiency - IELTS 7(L: 8.5 R: 8 W: 6 S: 6) - 2016.6

**Japanese** Limited working proficiency