

JIAXUAN TANG

Suzhou, Jiangsu, China

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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/C++, Cuda, MPI, Python, Java, SolidWorks, Ansys, Abaqus, Creo, Fusion 360
Cadence, Matlab, Ansa, AutoCAD, OpenGL, Paraview, VBA, Office

Main Courses

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

WORKING EXPERIENCE

Huawei

Simulation Algorithms Engineer

Sept 2022 - Present

Dongguan, Guangdong

- Working in the CBG department, simulation lab, using Ansa and FLEUNT to do the meshing process on the single fan for flow and acoustic simulation. Developed the automation program for the whole simulation process including mesh and solver, speeding up the time by 80%.
- Using C++ to develop the computational fluid dynamics solver based on the open-source project. Developed the module including unit transfer functions, LES smagorinsky collision models and aeroacoustic post-process modules. Used standard C++17 parallel algorithms to realize GPU acceleration, speeding up the program to 5 times. Now the solver is applied to the use of aeroacoustic earphone simulation, 4 times faster than using traditional FVM solver like FLUENT.

Coohom

Geometry Algorithms Intern

June 2021 - September 2021

Shanghai

- Working in Geometry middle ground group simulation scrum team's code modules including finite element solver on the structure and heat diffusion. 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 supporting the true cylindrical curve and continuous lines. Supported the development of the acoustic module including the coupling of multiple rooms.

Bosch

Engineering Test Intern(Part-time)

March 2021 - June 2021

Suzhou, Jiangsu

- 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 the whole process. Used PLC to propose the automation plan. The project was estimated to help save £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 drew the 2D and 3D CAD on spare parts of the medical devices for the package design. Used SOLIDWORKS to edit and improve the pipe diagram to make it more clear and more convenient for the service team.
- Used Cadence to design the PCB in order to test the cable's reliability. Realized fully automated test. Used PLC to test different PCBs and found over 3 hardware bugs before the installation.

- 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 analyse the data of stuff cost using VBA, increasing the efficiency up to 50% using functions-enabled GUI buttons.

EXTRACURRICULAR EXPERIENCE AND PROJECTS

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 schemes using Java and exported them 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 the performance of different subdivision schemes in terms of smoothness, accuracy and feature-preserving ability. According to their 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 the 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 a better estimate of the car's performance. Design the steering system with more robust performance. Worked with the 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 the conceptual stage used Solidworks to design the baseline layout of the whole plane.
- In the 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, saving the mass from 1500g to around 300g.

Computational Fluids Dynamics Coursework

December 2020 - January 2021

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

Imperial College Aerial Vehicle

2018 - 2020

- Worked in system group to build the UAV which attends a 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, in 2019.

AWARD/CERTIFICATES

Aeronautics Scholar Coursera Modules

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

Chinese Native Speaker

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

Japanese Limited working proficiency