Dr. Yang Liu

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PROFESSIONAL & RESEARCH EXPERIENCE

Politecnico di Milano   **Milan, Italy**

Postdoc Research Fellow in Department of Mechanical Engineering (Researcher Grant Awarded)   May. 2022 - Current

- Responsible for Polimi Mechanical Lab gearwheel test bench setup and construction.
- Developing and prototyping a smart, compact data acquisition system for high-precision online gear wheel strain measurement

Cranfield University   **Cranfield, UK**

Gas Turbine Performance based Software Platform Developer (Researcher)   Nov. 2016 - Sep. 2021

- Developed gas turbine engine *performance simulation* and *diagnostics* software. Constructed customised Simulation, Data Processing and Diagnostics modules for the system using C# language. Software integration with GUI and data visualisation
- Optimised code structures with 3 packages (.Classes, .Forms, .Functions) which permits the software to be upgraded/updated easily without modifying the whole code
- Validated software performance via correlations between simulations and test-bed data
- Compiled various technical reports on methodologies, simulation results, troubleshooting guidelines, improvement plans.
- Coordinated monthly meetings and feedback sessions with project customers on urgent issues.

XAG (Agriculture UAV)   **Guangzhou, China**

Senior CFD Engineer   Sep. 2015- Oct. 2016

- Individually invented a passive drag reduction device (20% less vibration) improving the performance of company products using multiple tools including CATIA v5, StarCCM+, MATLAB. *(Patent No: CN205872433U)*
- Prototyped, tested and verified via 3D printing, post-test data analysis with a patent filed and granted.
- Led agricultural drone system-level CFD modelling project and propeller aerodynamic behaviours in Xflow.
- Established general design principles for UAV propellers and specified fundamental variables
- Conducted concept design and development of a VTOL (XMISSION) for GIS application in Pro/E (prototype built for fly test)
- Collaborated with the industrial design team to optimise the structure layout without compromising aero performance.
- Assisted the preparation of technical documents (2016) of P20 UAV for Red Dot Design award entry.
- Promoted to senior engineer role due to the outstanding contributions.

Northwestern Ploytechnical University   **Xian, China**

Heavy Lift Team Research Collaborator   June. 2013 – Sep. 2013

- Optimised aerofoil geometry & Determined flight dynamics characteristics
- Calculated and reported key flight performance factors for different concepts and identified critical design requirements

EDUCATION

Cranfield University   2016-2021

Aerospace Engineering *in Aerospace Propulsion* | **Ph.D.**   (Awarded Full funding by AVIC international)
Thesis title: Thermodynamics Cycle and Performance of Reheat Gas Turbine Engines

- Initiated a novel gas turbine ideal thermodynamics cycles in **MATLAB**
- Designed reheat cycle thermodynamics parametric selection process
- Developed reheat gas turbine operation scheme and performance data selection
- Undertaken reheat engine ambient condition variation characteristics studies (**PYTHIA.C#**)
- Feasibility study of reheat engine reality ambient condition operation
- Published "An Integrated Principal Component Analysis, Artificial Neural Network and Gas Path Analysis Approach for Multi-Component Fault Diagnostics of Gas Turbine Engines" (co-Author)

Imperial College London   2014-2015

Advanced Aeronautical Engineering | **MSc**   (Merit)

- Focus on Flow Control: Sensitivity study of turbulence model (reduced 45% turbulence on 4D model)

University of Liverpool   2011-2014

Aerospace Engineering | **BEng**   (First Class)

- Top 5 in Faculty of Aerospace & Awarded Scholarship from 2011 to 2014 for first-class academic performance

TECHNICAL SKILLS

- Mathematic tools & Programming: MATLAB, C#, Python, Fortran
- Technical software: NPSS, Xflow, Start-CCM+, Ansys Fluent, Arduino
- Aircraft Design: XFoil, QPROP, Javaprop, Suave
- CAD: Pro/E, Catia v5, Solidworks
- Reporting: MS office, LaTeX,
- Languages: English(Fluent), Mandarin(Native)