+49 17657961445
80805, Munich
tian.lan@gmx.net
LinkedIn
Website

Lan, Tian

Education

Master of Aerospace Engineering **04/2020 - 05/2024**
Technical University of Munich

Main courses: Rotorcraft Engineering, Aerodynamics, Unsteady Aerodynamics, Aeroelasticity, Applied CFD, Composite Structures, Safety & Certification of Aircraft, Light Weight Structures

Master of Aerospace Engineering (international exchange program) **09/2020 - 02/2023**
Universitat Politècnica de Catalunya (UPC)

Main courses: Spacecraft Design, Architecture of aircraft system, Astrodynamics, English for management.

Bachelor of Aerospace Engineering **10/2016 - 03/2020**
University of Stuttgart

Main courses: Advanced mathematics, Numerical simulation, Thermodynamics, Electrical engineering, Technical Mechanics, Fluid Mechanics, Heat transfer & heat radiation Software engineering

Research

Aerial Tensile Perching and Disentangling Mechanism for Long-Term Environmental Monitoring Applications **05/2023**
Master's Thesis and Conference Paper

- Accepted by IEEE ICRA 2024
- Explored perching technology of aerial robots for environmental sensing.
- Gained fundamental knowledge of drone manufacturing and repairing.
- Designed a multi-modal aerial robot system for long-term environmental monitoring.

FishBAC (Fish Bone Active Camber) Structure Optimization of the Active Camber Morphing and Pitching Rotor Airfoil by 2D-FE Analysis **01/2022**
Semester Thesis

- Investigated the fish-inspired active camber morphing concepts for future helicopter design.
- Identified conflicting requirements for camber morphing concepts from a structural point of view.
- Developed Finite Element structural models of FishBAC and varied structural parameters such as skin pre-tensioning, skin thickness, and spine stiffness.
- Conducted multi-objective optimization on the FishBAC structure in terms of minimal camber deflection deviation and weight.

Characterization of the Contact Angle Influence during Trailing Edge Disintegration of Water on a Flat Plate **09/2019**
Bachelor's Thesis

- Conducted experimental measurements of water droplet disintegration at the trailing edge of a gas-turbine blade to investigate the influence of hydrophobicity, blade surface, and volume flow on the process (High-fogging).
- Prepared samples of glass and plexiglass to investigate the influence of hydrophobicity.
- Characterized the influences of hydrophobicity and volume flow on the disintegration process based on all measurements.

Experience

Student Research Assistant - Environmental Monitoring Robots **Since 05/2024**
Assistant Professorship of eAviation *Munich*

- Research on multimodal framework for environmental perception and monitoring.

Internship - Additive Manufacturing in Aviation **01/2024 - 04/2024**
Lufthansa Technik AG *Hamburg*

- Design and research of aircraft interior parts based on various 3d printing processes.

Structural Engineer - eVTOL **05/2023 - 05/2023**
HORYZN *Munich*

- Pioneer of eVTOL for defibrillator transportation in Germany.
- Responsible for the manufacturing process of eVTOL wing structures.
- Participated in CFRP fabrication and supported other teams regarding structure.

Student Tutor - Material Science **10/2021 - 10/2022**
Chair of Materials Engineering of Additive Manufacturing (MAE) *Munich*

- Mentored and instructed a group of 50+ undergraduate students in Material Science.

Mechnical Engineer - Payload Design **05/2020 - 10/2022**
Scientific Workgroup for Rocketry and Spaceflight (WARR) - Robotics *Munich*

- Explored solar sintering of local soil for lunar habitat construction by a sustainable lunar robot with unique lens.
- Participated in all phases of the project lifecycle, including design, construction, manufacturing, and testing.
- Successfully participated in the IGLUNA 2021 Field Campaign, organized by Swiss Space Office and European Space Agency in Luzern.

Internship - Additive Manufacturing for Satellites **10/2019 - 02/2020**
Fraunhofer Institute for Manufacturing Engineering and Automation (IPA) *Stuttgart*

- Learned the detailed principles and operations of Additive Manufacturing in practice and deeply understood its application.
- Designed and constructed testing prototypes based on fused deposition modeling (FDM) with a novel material.

Student Research Assistant - Thermodynamics **10/2018 - 08/2019**
Chair of Aerospace Thermodynamics (ITLR) *Stuttgart*

- Mentored and instructed a group of 50+ undergraduate students in Thermodynamics.
- University teaching.

Skills

Programming	Developed scripts for data analysis, automation, and control systems; built a personal webpage using HTML and VS Code. (Python, C/C++, MATLAB, VS Code)
Mechanical Design	Designed and built robotic mechanisms, including grippers, claws, and autonomous systems for research and exploration. (SolidWorks, Fusion 360, Siemens NX, CATIA, 3D Experience)
Additive Manufacturing	Hands-on experience with SLS, SLA, and FDM 3D printing for rapid prototyping and functional part development. (Preform (SLS & SLA), UltiMaker Cura (FDM), Bambu Studio)
Robotics	Built robotic systems with sensor integration and motion planning capabilities. (Arduino, Mission Planner, Vicon Motion Capture, ROS)
Visualization	Created high-quality renders, technical illustrations, and posters for clear presentation of research papers. (Fusion 360, 3ds Max, Adobe Illustrator)
Simulation	Conducted structural and flow simulations for aerospace and mechanical components, optimizing designs for performance and reliability. (Abaqus, ANSYS, Altair HyperMesh)
Communication	English (Fluent), German (Fluent), Spanish (Basic), Japanese (Beginner), Mandarin (Native)

Hobbies

- Alone and joint music making with ErHu, guitar
- Swimming, skiing, running, hiking, and wind surfing
- 3D printing, Arduino projects