

# YONGHUI WANG

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Place of Residence: 2624 HP Delft, the Netherlands



## SUMMARY

*I'm a motivated second-year master's student in Mechanical Engineering, specializing in Flow & Energy. My expertise lies in the application of numerical simulation to industrial solutions, particularly in cases involving multiphase flow, fluid-structure interaction (FSI), combustion and associated thermo-fluid coupling. I am now seeking a permanent position in CFD simulation or experimental fluid mechanics.*

## EDUCATION

**Delft University of Technology, Faculty of Mechanical Engineering**

**the Netherlands**

🚧 *Master of Science in Mechanical Engineering*

**09/2022 – 08/2024**

🚧 *Major: Energy Flow & Process Technology*

**Dalian University of Technology, School of Mechanical Engineering**

**Chinese mainland**

🚧 *Bachelor of Science in Mechanical Engineering*

**09/2018 - 07/2022**

🚧 *Major: Mechanical Design & Manufacturing and Their Automation (International Class)*

## RESEARCH

**Modelling and Analysis of Compressors in Wet CRHP Systems Based on CFD Simulation**

**11/2023 – 08/2024**

🚧 **Leader**

- ✓ Employed industrial software such as Inventor, TwinMesh and Ansys CFX to analyze the internal pressure characteristics and volumetric efficiency of an oil-free twin-screw compressor in collaboration with companies: CFX BERLIN and Atlas Copco.
- ✓ Meshed the compressor stator and rotors in excellent quality separately through the integration of Ansys Meshing and TwinMesh, followed by an effective mesh independence study.
- ✓ Adopting the advanced inhomogeneous free surface model and particle transport model separately, trying to improve volumetric efficiency and performance of the compressor.
- ✓ **Accomplishments:** Scored 9.0/10.0 in the mid-term defense.

**Numerical Analysis of the Turbulent Flow through a Channel with Baffle Plates**

**04/2023 - 06/2023**

- ✓ Reproduced the flow through channels with straight and S-shaped baffles separately via Ansys Fluent while considering the suitable mesh constraints and velocity transition near the baffles.
- ✓ Compared the flow characteristic with the results from references in each domain of the channel, verifying the reliability of previous research.

**Design of Shell and Tube Heat Exchangers and Air-Cooled Heat Exchangers**

**02/2023 - 04/2023**

- ✓ Followed the "Basic Design Procedure and Theory" to design a shell-and-tube heat exchanger with a maximum pressure drop of 20 kPa in Python, and further minimized its weight via the iterative optimization.
- ✓ Designed an air-cooled heat exchanger installed inside a forced draft cooling tower employing Aspen Plus. Further, considered the effect of the total pressure and volumetric flow rate of the moving air on power consumption when selecting the fan size.
- ✓ **Accomplishments:** Successfully designed the two heat exchangers and scored 9.0/10.0.

**Study on Fault Diagnosis and Improvement of Aircraft Cockpit Canopy Hydraulic System**

**09/2021 - 06/2022**

🚧 **Leader**

- ✓ Simulated the effect of air content and saturation pressure of the hydraulic oil on the balance of the actuating cylinders and figured out when the air content exceeds 5% and the saturation pressure reaches 16 bar, the deviation of the actuating cylinder will cause a malfunction.
- ✓ Verified the possibility of a differential connection between the actuating cylinder and control switch. When the control switch unexpectedly deviates positively by 1mm, it led to a malfunction.

## INTERNSHIP

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Company: NeoStove B.V.

07/2023 - 09/2023, 06/2024 - Present

Project: Establishment of Heat Transfer and Combustion Models along with Fuel Efficiency Analysis for a Fin-Based Frying Pan

🚩 Leader

- ✓ Employed the lumped thermal capacity model to simulate the cooling process of the frying pan, exploring its cooling rate under different materials and wall thicknesses for cooling optimization.
- ✓ Carried out thermal testing experiments using three different fin arrangements and proved that radially distributed fins can maximize the heating rate and fuel efficiency, with values of 40.28% and 56.41%.
- ✓ Established models for heat dissipation using MATLAB and fuel combustion using Ansys CFX, obtaining the optimal number and geometric shape of the fins for both heating and cooling performance.
- ✓ **Accomplishments:** Designed a new type of frying pan significantly shortening the cooling time and improving fuel efficiency.

## ACTIVITIES

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HONOR 2024 Campus Ambassador

03/2024 - Present

- ✓ Promoting the awareness of HONOR in Netherlands through organizing campus events, fostering student engagement, providing feedback and collaborating with the marketing team to execute promotional strategies.

Dalian University of Technology 5th “Dream Cup” Entrepreneurship Competition

09/2019 - 12/2019

🚩 Leader

- ✓ I was responsible for planning the team members to finish the assigned tasks in time, including the feasibility analysis report of the project in the early stage, the market research and data analysis in the middle stage, and the defense meeting in the later stage.
- ✓ **Accomplishments:** Won the school-level second prize.

## REFEREES

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Delft University of Technology, Department of Process & Energy

Prof.dr. K. (Kamel) Hooman

Email: K.Hooman@tudelft.nl

NeoStove B.V.

Dr. H.B. Eral Prakash

Email: surya@effium.com

## ADDITIONAL

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- ✓ IT skills: In good command of Python, Matlab, Inventor, Fusion 360, CAXA, Ansys Fluent, Ansys CFX, TwinMesh, Latex, etc.
- ✓ Language skills: Native in Mandarin, proficient in English (TOEFL: 96/120).
- ✓ Hobbies: Six-year bodybuilding experience, advanced Sudoku, vocal training and sketching.