ZHENGWEI CHEN

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EDUCATION

Shanghai Jiaotong University, China *September 2016 - July 2020*
Bachelor of Mechanical Engineering

Purdue University, United State *August 2020 - August 2021*
Master of Mechanical Engineering

Purdue University, United State *January 2022 - present*
PhD student of Mechanical Engineering

RESEARCH

'Wu Dazhao Scholar' scientfic research project 2018
Director: Chao-An Lin.
Simulate the lid driven cavity flow using SIMPLE algorithm with three types of discretization schemes. Calculate the velocity field under different Reynold number. Evaluate the accuracy of the difference schemes by comparing the simulation result with the experimental result.

REP microfluidic research 2019 -present
Director: Steve Wereley.
Rapid Electrokinetic Patterning (REP) known as an micro-manipulation techniques have proven to be of great importance in studying synthetic and biological particles. We study the flow field around a dynamically changing optically activated REP micro-vortex using computational modelling and particle image velocimetry (PIV). The resulting flow velocity was measured by a time-resolved PIV analysis. A model was created using COMSOL Multiphysics for flow visualization in custom-shaped REP vortices. .(`https://meetings.aps.org/Meeting/DFD20/Session/J05.8`)

Probe traverse system for supersonic wind tunnel 2020
Director:Guillermo Paniagua.
The traverse system will move probes inside the wind tunnel when supersonic wind tunnel is operating under high pressure and temperature, leading to a big challenge in moving probes in such a harsh environment while ensuring tiny air leakage. I derived inspiration from gear box lever, harnessed my strong knowledge in Fluid mechanics and material mechanics and made irreplaceable contribution on our project especially the sealing system design and weight reduction. It was selected as the finalists of Malott Innovation Award among 49 senior design groups and won the only Best Engineering Prize. (`https://engineering.purdue.edu/ME/News/2020/who-will-win-best-senior-design-project-of-2020`)

WORKING EXPERIENCE

Thermal Engineer 2021.06-2021.12
Design and simulate the thermal management system for electric vehicle battery pack. Design and modify the cooling plate and tube system using CATIA. Massive 3-D transient CFD simulation of battery package using together with advanced simulation technique (i.e. Reduced Order Model and ECM Barrery model).

Thermal design of a retractable lidar integrated case. The product will be published with Lotus new car "Lambda".

LANGUAGE PROFICIENTS

TOFEL 98
GRE 324+2.5

TECHNICAL STRENGTHS

CAD	Siemens NX, CATIA (expertise in pipeline specially), SolidWorks
CFD	Ansys (Fluent; Mechanical; Discovery; SCDM), COMSOL
Programming	C, MATLAB, Python, OpenFOAM

ACADEMIC ACHIEVEMENTS

Malott Innovation Award 2020: Best Engineering Prize

Dean's List Semester Honors for outstanding scholastic performance 2019&2020 (with GPA 3.96)

Global collaborative engineering design course 2018: 1st Prize

American Mathematical Contest in Modeling 2018: Honorable Award