

Shang-Ru Yao

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Education

Master of Science in Electrical and Computer Engineering **The Ohio State University, Columbus, OH, USA** *Aug. 2022-Present*

- Focused on computer engineering including knowledges of communication networking and project management

Master of Science in Mechanical Engineering

Chang Gung University, Taoyuan City, Taiwan

Sep. 2018-Jun. 2020

- Focused on computational fluid dynamics in combustion and heat transfer problems

Publications

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- Combustion and NO_x Formation of Opposed-jet Oxygen Enriched Syngas Diffusion Flames with CO₂ Dilution, *International Journal of Hydrogen Energy*, Jan. 2022. (Pending)
 - Dilution Effects Analysis on NO_x Emissions of Opposed-jet H₂/CO Syngas Diffusion Flames, *International Journal of Hydrogen Energy*, Apr. 2022. (First author)
 - Combustion and NO_x formation of opposed-jet syngas diffusion flames with CO₂ dilution, *the 16th International Conference on Flow Dynamics*, Japan, 2019. (First author)
 - Combustion and NO_x formation of opposed-jet oxygen enriched syngas diffusion flames with CO₂ dilution, *the 14th International Conference on Combustion and Energy Utilization*, Japan, 2018. (First author)

Projects

Design of the machine instruction | Simulator

- Designed the register transfers to implement a set of instructions as well as the complete control unit specifications for a complete instruction set given the hardware paths
- Designed the machine instructions to test the functions of the designed complete control unit and arithmetic logic unit

Website Development | HTML, PHP, JavaScript

- Built up the communicating chatting-board for students to leave messages no matter where they are and successfully conducted a community for students graduated from combustion lab
- Designed the website for a company to enhance their exposure on the internet which makes them successfully apply for three projects from a government in 2022

Calligraphy Generator | Python

- Designed GUI to make users easily generate figures with traditional Chinese calligraphy so users have more flexibility for their creations
- Generated the web crawler to grab the information from the web so that people can get the desired calligraphy for their words

Work Experiences

Research student assistant, The Ohio State University | NSF NEXUS, Columbus, USA

Nov. 2022-Present

- Conducted the connection between the controller and the component via Python to unify the control system of every component
- Built up the user interface through Python for controlling the whole components to create a comprehensive experiment

Thermal engineer, AcBel Polytech, Inc., Taipei, Taiwan

Jun. 2021-Aug. 2021

- Designed the cooling method to decrease the inner heat accumulation by 10% for the new product launch
- Provided thermal/cooling technical analysis as the preliminary reference for electronic engineers to design the charger or the adaptor
- Tested out the power supply cooling unit to understand the product specification and meet the compliance requirement of the products

Skills

Computer: Operating System, Computer architecture, Computer networking

Programming: C++, Python, JavaScript, MySQL, HTML, CSS, PHP, Git, Linux, MATLAB, ANSYS Fluent, FloTHERM, Icepack