Yang Chen [ORCID: 0009-0007-8814-2730]

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EDUCATION

Sun Yat-sen University Shenzhen, China
School of Intelligent Systems Engineering 09/2021 to present
Bachelor of Engineering in Transportation Engineering expected 06/2025
Cumulative GPA: 3.5; Research Supervisor: Professor Mengtang Li[1]

- ✓ Second-Class Scholarship of Sun Yat-sen University
- ✓ Excellent Student Leader
- ✓ Outstanding award for artistic and athletic performance
- ✓ Meritorious award for morality

PUBLICATION

(Under review) Li, M., Cai, M., **Chen, Y.**, Ye, Y., Wang, J., & Pan, Z. (2024, August 13-15). A Novel MRI-Compatible Rotary Encoder: Design and Evaluation.

Submitted to the 2nd International Conference on the Frontiers of Robotics and Software Engineering, Guiyang, China[2]

RESEARCH/PROJECTS (Selected)

Gaze-attention based multiple-surgical-tool field of view adjustment for a tendon-driven continuum laparoscopic robot 04/2024 - 08/2024

Participatory Investigator (Supervisor: Professor Mengtang Li)

- Collaborated in determining the adoption of the two-stage approach proposed by Park et al. for real-time estimation of the surgeon's line of sight
- Calculated and adjusted the hand-eye consistency errors
- Conducted the simulation experiment for verification

A novel magnetic resonance imaging-compatible rotary encoder 12/2023 - 04/2024

Principal Investigator (Supervisor: Professor Mengtang Li)

- Designed the encoder, proposing a new scheme with smaller errors in the location test and speed test compared to traditional commercial devices as well as higher precision and stability
- Assessed the experiment and drafted the affiliated research article

Intelligent cooperative control of mobile robot for industrial warehousing[3] 12/2022 - 12/2023

Project Leader and Principal Investigator (Supervisor: Professor Mengtang Li)

- Established with SolidWorks the model of a smart vehicle with a robotic arm on a Mecanum wheel and completed its simulation and adjustment with Simulink
- Participated in the development and implementation of the path planning algorithm of the vehicle
- Managed the team and made work distribution

Carbon footprint prediction of residents in the center of a megacity based on multi-model transportation data[4] Spring 2024

[1] https://www.researchgate.net/profile/Mengtang-Li
[2] https://www.icfrse.org/
[3] Established and funded by the National College Student Innovation/Entrepreneurship Project
[4] Based on data of two public transportation systems (metro and bus) of the city Chengdu, China

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Participatory Investigator (Supervisor: Associate Professor Yonghong Liu)

- Constructed the trip chain of the metro system
- Determined the embarking and disembarking routes of the bus system by referencing to pertinent literature
- Performed visualization and encapsulation of the corresponding software

Optimization and function expansion of a facial expression recognition system Fall 2023

Participatory Investigator (Supervisor: Associate Professor Chao Gou)

- Implemented the integrated Principal Component Analysis + K-Nearest Neighbor approach, visualized the performance parameters, and attempted to optimize its data set
- Prepared slideshow for demonstration and conducted oral presentation

System for the analysis of unusual events at urban crossroads based on people-vehicle non-trajectory perception[5] Spring 2023

Participatory Investigator (Supervisor: Dr. Yiting Zhu; Associate Professor Ronghui Zhang)

- Simulated unusual events and appraised relevant strategies
- Conducted literature review, prepared the slideshow, and gave the oral presentation

ArcGIS-based evaluation of solar panel installation strategies in residential communities Spring 2023

Participatory Investigator (Supervisor: Professor Meng Zhou)

- Determined the research direction, operated the ArcGIS software, and presented the results with slideshow

Car networking and lane detection of autonomous driving Spring 2023

Investigator (Supervisor: Associate Professor Ronghui Zhang)

- Conducted segmentation based on the network Segnet and lane detection on LaneNet and H-Net
- Compared traditional and novel methods for lane detection, analyzing their advantages and shortcomings respectively

Capacity of pedestrian crossing at an intersection and safety research report as well as target detection effectiveness of pedestrian and non-motorized vehicle Fall 2022

Project Leader and Principal Investigator (Supervisor: Associate Professor Zhaocheng He)

- Analyzed and evaluated the service performance of the pedestrian crossing and waiting area of the intersection
- Computed and analyzed the incidence of regulation violation of pedestrian and non-motorized vehicles
- Determined the research direction and designed the scheme
- Distributed tasks and participated in the on-site investigation

TECHNICAL SKILLS

Programming: Python, C++
Software: MATLAB, SimuLink, SolidWorks, VISSIM, SUMO, TransCAD, AutoCAD, ArcGIS

[5] Recommended by Sun Yat-sen University for research merit