Haoge(Hank) Zhou

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EDUCATION & QUALIFICATION

University of California, Riverside Riverside, CA
- Master of Science in Electrical Engineering, Department of Electrical and Computer Engineering 09/2022-03/2024
- GPA: 3.58/4.0
- Study in UCR COVEN Lab & CISL Lab

Southwest University Chongqing, China
- Bachelor of Science in Electrical Engineering and Its Automation 09/2018-06/2022
- 3rd Prize of Chongqing Division, National University Students Olympic Mathematical Competition 11/2021
- 3rd Class Scholarship for both Academic Excellence and Comprehensive Appraisals (Top 20%) 12/2019

Summer Camp and Short Course Program at University of Missouri 07/2019
- Learned the courses like Physics, C language, Digital image processing, Computer graphics, Structural Mechanics

WORK EXPERIENCE

Electrical Engineer 04/2024 - Present
- Amphastar Pharmaceuticals Inc

Teaching Assistant 01/2024 – 03/2024
- UCR EE 131 Edge Computing

MAIN RESEARCH EXPERIENCE

CooperSLAM: Infrastructure-less Cooperative SLAM for Interactive Multi-user AR 12/2023
- Propose a novel feature-based map alignment to minimize data transmission size between agents.
- Propose a progressive map refinement that continuously refines the map with new area explorations.
- Decouple features with robots' status and execute a distributed pose graph optimization using GTSAM.

Cooperative Lane Mapping using Fixed-Lag Smoothing. 09/2023
- Propose a novel road-map model using Bezier curve and an adaptive keypoints combination algorithm.
- Propose a loosely-coupled fixed-lag smoothing algorithm for kinematic and dynamic single track models.
- Extend single-vehicle smoothing to a fully distributed road-map monitoring system.

Astrophysics and Data Analytics Research Program, LIGO Lab, Caltech
Supervisor: Prof Alan J. Weinstein and Jonah Kanner from Caltech 07/2021-08/2021
- Studied papers about signal analysis and generation of gravitational waves as well as Python programming
- Used Python and open-source database from Caltech to find an effective signal hidden in the noise
- Converted signal from a time domain to frequency domain and analyzed the Signal-noise Ratio to judge quality of signals
- Filtered noise and false signals to get gravitational waves

The study of Classifier based on Machine Learning
Supervisor: Prof. Shiping Zhu from Southwest U 09/2020-12/2021
- Set up a monitor on pig farms to collected picture data and build a dataset
- Processed the data through Pytorch framework, including transforming the image to grayscale image and data storage format, reducing data dimension with YOLOv5 algorithms, and visualizing data
- Analyzed and classified the data using Pytorch and many python packages

Hierarchical Management for Biogas Combined Heat and Power
Supervisor: Prof. Hongjie Jia from Tianjin U 07/2020-08/2020
- Established a biomass cogeneration system model and proposed the layered synergy strategy to realize the synergistic optimization of ecological rural multi-energy system, and reduce the overall operating cost
- Analyzed the waste and biogas power generation process, studied the pluripotent coupling characteristics, set up an integrated energy system model based on photovoltaic, methane cogeneration, biomass energy storage comprehensive ecological energy, heat pump and electric energy storage, designed optimized hierarchical framework, and developed the program
- Run the hierarchical optimization scheduling algorithm, and designed a dynamic simulation model with MATLAB/Simulink, reducing the frequent adjustment of cogeneration output due to the forecasting errors in PV and load

ADDITIONAL SKILL

Languages: MATLAB, Python, C++, Linux bash shell.
Frameworks: ROS, Git
Other Skills: Basketball, guitar