

EDUCATION

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**Guangzhou University**

Bachelor of Engineering in Robot Engineering

Guangzhou, China

09/2019-06/2023

**GPA: 3.7 (4.0) Rank: 3<sup>rd</sup> (82)****Core courses:**

- Mathematics: Higher Mathematics (4.0/4.0), Linear Algebra (4.0/4.0), Theory of Matrices (4.0/4.0), Matrix Theory and Matlab Program Design (4.0/4.0), Complex Function And Integral Transform (3.6/4.0)
- Robotics/ML: Robotics Design (4.0/4.0), Modern Control Theory (3.4/4.0), Pattern Recognition and Artificial Intelligence (4.0/4.0), Machine Vision Foundation (4.0/4.0), Machine Learning (3.7/4.0)

**Publication:**

- [1] **M. Ye**, Y. Fan, X. Yuan “A general deep learning method for computing molecular parameters of viscoelastic constitutive model by solving an inverse problem” (Under revision in Journal of Computational Physics) ([Paper](#), [Code](#))
- [2] **M. Ye**, J. Zhang “MobiP: A Lightweight model for Driving Perception using MobileNet” (Manuscript) ([Paper](#))

**Honors & Awards:**The **Third prize** in 12th National College Students **Mathematics Competition**(**top 15%** of all participants)The Second-class Scholarship in Guangzhou University, twice (**top 10%** of all students)Guangzhou University Intelligent Manufacturing Innovation Program Membership(**top 1%** of all students)**RESEARCH EXPERIENCE**

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Institute for Systems Rheology, Guangzhou UniversityResearch Assistant, Advisor: Prof. [Xue-Feng Yuan](#)**Project: Physics-Informed Machine Learning**

03/2021-11/2022

- Utilized DNN to approximate constitutive models and Proposed a novel inverse learning method based on gradient decent for computing molecular parameters
- Obtained accurate parameter estimation results(**less than 1% relative error**) in both test data and noisy experience data measured from rheometric experiments
- Composed paper [1] and gave a presentation at the **20<sup>th</sup> National Conference on Physical Gas Dynamics**

**Intelligent Vehicle Laboratory**, Guangzhou UniversityResearch Assistant, Advisor: Prof. [Jihua Zhang](#)**Project: Learning robust communication protocol for multi-agent cooperation**

07/2020-03/2021

- Enabled agents to learn effective communication schemes in cooperative environments with unstable communication (message transmitted between agents has a certain probability of loss and delayed arrival)
- An attention-based message-processing module is designed for understanding new messages received at the moment by combining information transmitted in the past few time steps
- Reproduced some baseline algorithms on Multi-Agent Particle Environment with unstable communication and achieved preliminary results on my novel algorithm

**Project: Lightweight Algorithms for Panoptic Driving Perception**

12/2022-05/2023

- Proposed **MobiP**([Paper \[2\]](#)), a model that can simultaneously perform three visual perception tasks including vehicle detection, drivable area and lane line segmentation
- Combined the drivable area and lane line detection together for multi-class segmentation and use inverted residuals as the basic building block to implement the network
- Achieved the inference speed of **56 FPS(37% faster** than YOLOP, the SOTA algorithm) in Nvidia V100 GPU and **4.8 FPS in Raspberry Pi 4B** while maintaining excellent performance

**RESEARCH INTERESTS**

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**Fields:** Off-line Learning, Robot Learning, Vision-Based Exploration and Planning, Sim-to-Real Transfer**Methods:** Deep Learning, Reinforcement Learning, Physics-Informed Machine Learning**Research Proposal:** Efficient Vision-Based Reinforcement Learning for Physical Robots ([PDF](#))**TECHNICAL SKILLS**

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**Language:** IELTS 6.5 (Reading 6.0, Listening 6.5, Speaking 6.5, Writing 6.0)**Programming:** Python (proficient), C (good knowledge), Matlab (good knowledge)**Tools:** PyTorch (proficient), Multiprocessing(good knowledge), OpenCV, Git, LaTeX**Robotics:** ABB Robots, Arduino, Raspberry Pi, SolidWorks