Shuaixin LIU

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Research interests: machine learning, underwater computer vision, object counting

Education

Ocean University of China, Qingdao, China **Sept 2022 - Present**

M.Sc., Control Engineering | Research with *Assoc. Prof. Kunqian Li*

- **GPA:** 3.7/4
- **Core Courses:** *Digital Electrical Technique, Analogue Electronic Technique*

Soochow University, Suzhou, China **Sept 2016 - Jun 2020**

B.Eng, Electrical Engineering and Intelligent Control

- **GPA:** 3.6/4
- **Core Courses:** *Pattern Recognition, Stochastic Process, Matrix Analysis*

PUBLICATIONS

[1] **Liu, S.**, Li, K., Ding, Y., Xu, K., Jiang, Q., Wu, Q. M., & Song, D. (2024). Towards the in-situ Trunk Identification and Length Measurement of Sea Cucumbers via Bézier Curve Modelling. arXiv:2406.13951 (Submit to Computers and Electronics in Agriculture, Under Review)

[2] **Liu, S.**, Li, K., & Ding, Y. (2024). Underwater Image Enhancement by Diffusion Model with Customized CLIP-Classifier. arXiv:2405.16214 (Submit to IEEE Transactions on Neural Networks and Learning Systems, Under Review)

[3] **Liu, S.**, Zheng, J., Wang, X., Zhang, Z., & Sun, R. Target detection from 3D point-cloud using Gaussian function and CNN. 2019 34rd Youth Academic Annual Conference of Chinese Association of Automation (YAC). IEEE, 2019: 562-567.

[4] Ding, Y., Li, K., Mei, H., **Liu, S.**, & Hou, G. (2024). WaterMono: Teacher-Guided Anomaly Masking and Enhancement Boosting for Robust Underwater Self-Supervised Monocular Depth Estimation. arxiv:2406.13344. (Submit to IEEE Transactions on Instrumentation & Measurement, Under Review)

RESEARCH PROJECTS

Mater Thesis: Underwater Image Enhancement with Diffusion Model

Researcher | Advsior: Assoc. Prof. Kunqian Li **Mar 2024 - Present**

- Combining multimodal cross-domain synergy to break through the limitations of synthetic reference images.
- Exploring new ways of training image-to-image diffusion models.

Coure Project: Research and Development of Key Technologies and Devices for Efficient Harvesting of Sea Cucumbers in Marine Pastures

Designer & Collaborator | Prof. Dalei Song **Oct 2022 - Aug 2023**

- Designing the target detection and curve prediction model based on Bézier Curve model, and mastering the principle of 3D imaging of binocular camera.
- Deploying algorithms to mobile devices to achieve real-time resource monitoring of sea cucumbers by underwater robots.

WORK EXPERIENCE

Guizhou Jiading Law Firm

Legal Assistant **May 2022 - Jul 2022**

- Case organisation and follow up, assisting with contracting and preparing for pre-court work.
- Drafting of legal documents (divorce proceedings, division of property)

Tsingshan Pioneer Education Co., LTD

Founders and shareholders **Jul 2020 - Oct 2021**

- Establish Tsingshan Pioneer Education Co., LTD.
- Worked as a math teacher and discussed the teaching content.
- Closed down due to national "Double Reduction" Policy.

HONORS AND AWARDS

- The Second Prize Scholarship (**Top 20%**) 2016&2018
- National Encouragement Scholarship (**Top 20%**) 2017
- Pacemaker to Merit Student (**Top 30%**) 2019
- The Second Prize of the 4th Jiangsu University Student Transportation Science and Technology Competition (**Top 20%**) 2019

SKILLS

Technology: Python, PyTorch, Binocular camera 3D imaging, Lidar, Underwater image enhancement, Object counting.
Language: Mandarin, English (CET-6 460, Prepare for IELTS).
Certificate: Legal Profession Qualification Certificate of the People's Republic of China.