

HAN YI

(+65)83460698 | hany24@u.nus.edu | Homepage: texaser.github.io/ | [in linkedin.com/in/han-yi/](https://www.linkedin.com/in/han-yi/) | github.com/Texaser

EDUCATION

National University of Singapore (NUS)

Aug. 2022 - Present

Master of Computing (Computer Science)

Courses: Uncertainty Modeling in AI, 3D Computer Vision, Knowledge Discovery and Data Mining

East China University of Science and Technology (ECUST)

Sep. 2018 - June. 2022

Bachelor of Science in Mathematics and Applied Mathematics (Major)

GPA: 3.7 / 4.0 Ranking: 13% (12 / 90)

Bachelor of Science in Computer Science (Minor)

PUBLICATIONS

1. Progressive Text-to-3D Generation for Automatic 3D Prototyping.

Han Yi, Zhedong Zheng, Xiangyu Xu, Tat-seng Chua

IEEE Conference on Robotics and Automation (ICRA 2024) (Submitted)

arXiv: 2309.14600, 2023

2. Image Deblurring with Image Blurring.

Ziyao Li, Zhi Gao, Han Yi, Yu Fu, Boan Chen.

IEEE Transactions on Image Processing (TIP 2023) DOI: 10.1109/TIP.2023.3321515

3. Single Image Deraindrop Leveraging Luminance Priors and Context Aggregation.

Yi Liu, Zhi Gao, Tiancan Mei, Han Yi

IEEE Transactions on Image Processing (TIP 2023) (Under review)

4. Motion Blur Synthesis for Image Deblurring via Disentangling Latent Blur Space.

Ziyao Li, Han Yi, Zhiyu Zhou, Xuhui Zhao, Zhi Gao

IEEE Signal Processing Letters (SPL 2023) (Under review)

5. A hierarchical geometry-to-semantic fusion GNN framework for earth surface anomalies detection.

Boan Chen, Aohan Hu, Mengjie Xie, Zhi Gao, Xuhui Zhao, Han Yi

International Conference On Brain-Inspired Cognitive Systems (BICS 2023) (Best Student Paper)

6. How Challenging is a Challenge for SLAM? An Answer from Quantitative Visual Evaluation.

Xuhui Zhao, Zhi Gao, Hao Li, Chenyang Li, Jingwei Chen, Han Yi

International Conference On Brain-Inspired Cognitive Systems (BICS 2023)

RESEARCH EXPERIENCE

Progressive Text-to-3D Generation for Automatic 3D Prototyping

Dec. 2022 - Present

NExT++ Research Center, National University of Singapore

Advisor: Prof. Tat-seng Chua

- Proposed a **Multi-Scale Triplane Network (MTN)** to gradually create the 3D model in a bottom-up style, effectively alleviating the optimization issue.
- Proposed a **progressive learning** strategy that simultaneously reduces the camera radius and time step t in diffusion to refine details of the 3D model in a coarse-to-fine manner.
- Achieved high-resolution outputs that align closely with natural language descriptions.

Image Deblurring with Image Blurring

Nov. 2021 - Oct. 2022

Wuhan University

Advisor: Prof. Zhi Gao

- Proposed a novel **motion deblurring** framework that uniquely integrates both **image blurring** and **deblurring** processes, enhancing performance and robustness.

- Synthesized a blur-sharp paired blur dataset **Rear-Blur-COCOMini** to bridge the gap between the training dataset and real-world blur images.
- Obtained state-of-the-art deblurred results on multiple datasets and introduced the **Variance of Laplacian edge detection (VL)** to quantitatively evaluate the effect on datasets without ground truth.

LED Visible Light Positioning Algorithm

Tsinghua University

July. 2021 - Sep. 2021

Advisor: Prof. Hao Zhang

- Programmed LED lights on the ceiling with Manchester coding.
- Utilized **Solvepnp** algorithm from **OpenCV** to localize the relative position against the LED lights.
- Improved the algorithm from reducing the number of LED lights required, solving problems such as special positions, turning angle problems, etc.
- Introduced **Malformation Matrix** to fix the real-world error to further boost the accuracy.

Maintenance System with Predictability Figuration

Tsinghua University

Sep. 2020 - Mar. 2021

Advisor: Prof. Hao Zhang

- Built predictive models to calculate **RUL** (Remaining Useful Life) and predict necessary maintenance jobs.
- Utilized **Abrupt Detection**, such as **Pettitt Detection** and **Mann-Kendall Detection**, to deal with continuously fluctuating sensor data.
- Optimized the efficiency of **Abrupt Detection** with **Cumulative Sum Control Chart** and **Exponentially Weighted Moving-Average** methods.

INTERNSHIPS

Google Inc. Online Internship

Data Analyst Intern

May. 2019 - Aug. 2019

- Implemented **A/B testings** and **data cleaning** on user data using **Spark**, **Numpy**, and **Scikit-learn**.
- Applied **Pandas**, **Matplotlib**, **Seaborn** to visualize the user data and more intuitively reflect the users' experience.
- Utilized **Python**, **SQL** to evaluate and analyze use experience on the products and provide reasonable suggestions.

COURSE PROJECTS

Singapore Real Estate Price Prediction and Recommendation with Machine Learning

- Applied **data cleaning**, **feature selection**, and **EDA** on data using **Pandas**, **Scikit-learn**, and **Numpy**.
- Trained regression models using **Decision Tree**, **Random Forest**, **Gradient Boosting**, **LightGBM**, **XGBoost**, and **CatBoost** and compared their efficiency.
- Built a **recommender system** using **Non-negative Matrix Factorization** and **cosine similarity**.

HONORS

03/2020 Meritorious Winner of 2020 Mathematical Contest in Modeling (MCM) by COMAP

10/2019 The 3rd Prize Award in the Preliminary Round of the 2019 "FLTRP•ETIC Cup" English Reading Contest

11/2019 The 2nd Prize Award in the university scholarship in the academic year of 2018-2019

06/2019 NDG Linux Essentials Certificate

SKILLS

Programming: Python, C/C++, JavaScript, SQL, HTML5, CSS3, Bash

Library/Framework: Pytorch, Tensorflow, Keras, Pandas, Numpy, Scikit-learn, Seaborn, Vue, Echarts, Django

Tool: Docker, Spark, Hadoop, Git