Ms. Liuyi Fan

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EDUCATION

University of Michigan-Ann Arbor 08/2024 - 06/2026 (Expected)

- Master of Engineering – Electrical and Computer Engineering program, specializing in Signal Processing & Machine learning
- Core Courses: Advanced Data Structures, Probability and Random Processes, Machine Learning, Computer Vision

Dalian University of Technology 09/2020 - 06/2024

- Bachelor of Engineering - Electronic Information Engineering (English Intensive) program
- **Overall GPA**: 3.74/4.0; Credits Earned: 170/170; Class Rank: 25/170
- Core Courses: Higher Mathematics A1, C Programming, Probability and Statistics A, Discrete Mathematics, Signal and System (Bilingual), Digital Circus and System (Bilingual), Programming Basis A Course Design, and Deep Learning.

PROFESSIONAL SKILLS

C; C++; Python; PyTorch; MATLAB; Verilog; EDA; Modelsim; Proteus; Quartus

PROFESSIONAL EXPERIENCE

Hong Kong Institute of Science & Innovation 08/2023 – 02/2024

Scene Generation Engineer Hong Kong, China

- Expanded the Prompt's function by allowing it to generate more user parameters so that it could produce most of the trees based on language;
- Innovatively used text-to-image to generate height map, input it to Blender, and generated a corresponding landform;
- Introduced a new method, Terrain Diffusion Network, into the model to meet realistic terrain and enhance controllability;
- Took topographic features into consideration to maximize TDN, and sketched a latent space in a pre-trained terrain autoencoder;
- Devised and optimized algorithms for dynamic scene rendering, ensuring seamless transitions and real-time responsiveness.

Dalian Wisdom Wizard Company 06/2023 - 07/2023

Intern YOLOv5-based Target Detection Dalian, China

- Adopted the combination of Yolov5, Cache, and image codec for data reading training to save space and reduce training time;
- Focused on the Mosaic Augmentation in datasets, and discovered the model would indicate better convergence when using 1.0 probability;
- Spearheaded helmet-wearing detection initiative, including dataset curation, model training, and outcome verification;
- Instituted a rigorous evaluation protocol, utilizing metrics like precision, recall, and mAP to track model performance.

PROJECT EXPERIENCE

3D City Map Generation Model 02/2024 – 06/2024

Outcome: *Research and Implementation of AR based 3D Map Construction Algorithm for Navigation and Positioning*

- Designed a 3D city map generation model based on AR, which creatively integrated the city layout generator, background generator and building instance generator;
- Adopted generative neural hash grid to carry out implicit spatial parameterization of 3D location and scene semantics;
- Evaluated model using indicators-FID & KID, results showed the superiority of the model over the traditional methods;
- Built ablation experiments to show the building instance generator plays a crucial role in generating high-quality 3D city images, and the auxiliary influence of instance labels cannot be ignored.

Esp8266 Chip-based Smart Home System 05/2022 - 12/2022

- Developed a smart home system with a camera designed for face recognition and intrusion detection for the elderly;
- Self-learned Arduino and esp32-cam modules to ensure proper image capturing and data transmission to the control system;
- Realized automatic control of home devices in C language and accomplished manual control via Huawei Cloud on QT interface.

HONOR AND AWARDS

Excellent Graduation Project 2024

Scholarships for internship practice 2023

H Award in Mathematical Contest In Modeling (Top 10% out of 1000+ teams) 2021

Scholarships for academic excellence (Top 10% of grade level) 2021