Hailiang ZHU

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EDUCATIONAL BACKGROUND

ShanghaiTech University   Shanghai, China
School of Information Science and Technology   September 2024-June 2027 (expected)
Master of Engineering in Computer Science and Technology
Cumulative GPA: **3.67/4.0**

ShanghaiTech University   Shanghai, China
School of Information Science and Technology   September 2020-June 2024
Bachelor of Engineering in Computer Science and Technology
Cumulative GPA: **3.67/4.0**

Core Courses: Data Structure & Algorithms, Machine Learning, Database, Artificial Intelligence, Computer Architecture, Software Engineering, Human-Computer Interaction

RESEARCH EXPERIENCE

Virtual Reality and Visual Computing Center | Research Assistant   July 2022-November 2022
Supervised by Professor. Jingyi Yu | ShanghaiTech University
Core Contents:

- Utilized Maya to produce a dataset for later training renders relighting and multi-view (or say OLAT, one light at a time) pictures for different animals;
- Wrote some CUDA files in C++ and did differential and volumetric rendering to produce normal maps based on the current Artemis framework;
- Trained UNet to optimize the output pictures based on ground truth rendered by Maya;
- Used Phong model to output the relighting picture and fixed noise in the pictures by UNet.

Carnegie Mellon University Navlab   2023.06-2023.08(expected)
Supervised by Christoph Mertz | RISS(Robotics Institute Summer Scholar) program
Core Contents:

- *By utilizing the results of the panoptic segmentation model, automatically annotate objects in the dataset that are relevant to the construction area.*
- *Based on the newly generated dataset, fine-tune a pre-trained model to train a detector that can detect road information surrounding the construction area.*
- *Expand the annotation of the existing dataset and provide relevant information for navigation and planning within the construction area at the visual level.*

SELECTED COURSEWORK

Implementation of the 12306 train ticket booking system. | Software Engineering   *2023 Spring Semester*
- *The requirements have been determined using UML flowcharts.*
- *A complete train ticket booking system front-end and back-end implementation has been accomplished based on MATLAB.*
- *A ticket booking model has been built using UPPAAL, and the model has been validated.*
- *Write user documentation and test documentation.*

Solving QWOP with AI | *Course of Artificial Intelligence*   *2022 Fall Semester*
- *Completed the 100-meter QWOP run based on Artificial Intelligence, a popular Flash Game;*
- *Attempted different reinforcement learning methods to train models, including Policy Gradient, Advantage Actor-Critic, and Proximal Policy Optimization, and compared them.*

Predict Students' Performance Given Past Data | *Course of Database*   *2022 Fall Semester*
- *Completed data exploration and data cleaning, as well as preprocessed the CSV files with several methods in feature engineering;*

- *Trained the prediction model with seven common machine learning algorithms and selected three of them to do extra hyperparameter tuning.*

Face Mask Detection | *Course of Machine Learning*   *2022 Spring Semester*
- *Constructed a model to divide pictures of human faces into three categories: 'with mask', 'without a mask', and 'mask is worn incorrectly' and compared machine learning methods and deep learning methods;*
- *Got result that deep learning methods have considerable performance.*

EXTRACURRICULAR ACTIVITIES

Member of inSIST | ShanghaiTech University   *2022*
Member of ShanghaiTech Footbal Team   *2021-Present*

PROFESSIONAL SKILLS

Programming Language: *C/C++, C#, MATLAB, Python, SQL*
Developer Tools: *VS Code, Visual Studio, Intellij Pycharm*
Technologies/Frameworks: *Linux, GitHub*
Mathematics: *Calculus, Linear Algebra, Discrete Mathematics, Probability and Statistics*