DUOLEI WANG

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EDUCATION

Southern University of Science and Technology (SUSTech) 2020 - 2024

Major: Mathematics and Applied Mathematics

GPA: 3.54 (23/41)

Courses:

Notice: Courses in 2023 Spring are listed with the '*' symbol, also see Couses in 2023 Spring

Mathematics:

- Calculus, Mathematical Analysis, Real Analysis, Complex Analysis, Functional Analysis*

- Linear Algebra, Advanced Linear Algebra, Abstract Algebra

- Differential Geometry, Numerical Analysis, ODE, PDE, Mathematical Modeling*

Computer Science:

- Discrete Mathematics, Computer Programming A,

  Data Structures and Algorithm Analysis B, Algorithm Design and Analysis*

- Machine Learning

Statistics:

- Probability Theory, Probability and Statistics

- Introduction to Data Science, Introduction to Theoretical and Practical Data Science*

Projects:

- **n Body Simulation System**: A 2-D particles collision system based on K-D Tree and Queue Task Manager.

- **Traffic Sign Detection and Recognition (TSDR)**: A traffic sign detection and recognition system based on YOLOv5, including the Lane Detection based on LaneATT.

- **Minesweeper Game**: A simple minesweeper game based on JavaFX Framework.

- **Tetris Game**: The Tetris game based on JavaFX Framework.

RESEARCH EXPERIENCE

1. **Neural Network methods for PDE solving** (Github: Neural-Network-PDE)   April 2023 - Now
   University: Southern University of Science and Technology (SUSTech)
   Mentoring Professor: Zhen Zhang, `zhenz@sustech.edu.cn`
   Contents:

   - Learn the idea of the Operator Method of PDE solving.

   - Implements the Physics-informed neural networks (PINNS), based on pytorch framework.

   - Implements the Neural Galerkin Scheme method.

2. **Traffic Sign Detection and Recognition (TSDR)** (Final Report)   Nov 2022 - Feb 2023
   University: Southern University of Science and Technology (SUSTech)
   Mentoring Professor: Qi Hao, `haoq@sustech.edu.cn`

   Contents:

   - Use the Tsinghua-Tencent 100K as the dataset, learn the YOLOv5 to detect the traffic sign.

- Learn some data augment methods and implemented the whole project in the real-world situation.
- Implement the lane detection based on LaneATT, and cars detect based on YOLOv5. Created a simple method for the distance estimation based the Imaging Principle of the Camera.

3. **Global Education, Academics and Research Skills Program (GEARS)**   July 2022 - August 2022
University: North Carolina State University (NCSU)
Mentoring Professor: Zhilin Li, zhilin@ncsu.edu

Contents:

- Numerical methods for Solving Linear System and Interpolation Problem.
- Classic Clustering methods in Machine Learning.

AWARDS

Award Link	Year
The 2023 Reading Star of SUSTech Library	2023
Honorable Mention of Mathematical Contest in Modeling (MCM) in the United States	2022
Third Class of the Merit Student Scholarship	2022
Second Class of the Merit Student Scholarship	2021
Excellent campers in military training	2021
Recognition Award of the Freshmen Scholarship	2020

SKILLS

Code: Java (Practised), Python (Practised), Julia (Practised)

Editor: Latex (Practised)   Markdown (Practised)

Other: Github (Practised), Git (Middle Level), Linux (Beginner)

LANGUAGE

English: Fluent   **Chinese:** Native

EXTRA-CURRICULAR ACTIVITIES

Tennis   Chinese Rock music   Drawing and Painting