

# DUOLEI WANG

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## EDUCATION

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**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

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### 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](mailto: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](mailto: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](mailto:zhilin@ncsu.edu)

Contents

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

## AWARDS

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