

# SUN JUNZE

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## EDUCATION

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<b>Southeast University</b>	<i>2019.8 - 2023.6</i>
BEng, Transportation and communication	GPA: 3.32/4.0
<b>National University of Singapore</b>	<i>2022.8 -</i>
Exchange and MSc, Transportation and communication	GPA: 4.25/5.0

## PROJECTS

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**Intelligent Traffic Flow Control Strategies and Effectiveness Analysis of Highway Freight Corridor**, Final Year Project, Southeast University *2022.10-2023.5*

- Freight corridor simulation using SUMO
- ALINEA control by introducing ramp metering to complex system
- Statistical analysis and visualization of effects

**Reinforced Learning-based Parking Space Management In A Connected Vehicle Environment**, Final Year Project, National University of Singapore *2022.8-2023.5*

- Parking assignment problem solved using Reinforcement learning algorithms
- Urban parking problem with multiple lots
- Statistical analysis and agent training

**Digital testing of Maritime Autonomous Surface Ships**, Research project, Agency For Science Technology and Research (A\*STAR), AI Research Intern *2024.1-*

- Data augmentation and generation for critical scenario building
- Multiple data generative methods, VAE, GAN and etc.
- Scenario generation with existing generated data
- Training reinforcement learning agent with two phase reward

## AWARDS AND SCHOLARSHIPS

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<b>Arts Individual Scholarship of the School of transportation</b> , Southeast University	<i>2021.12</i>
<b>Academic Excellence award in subject</b> , Southeast University	<i>2021.12</i>
<b>Academic Excellence award in subject</b> , Southeast University	<i>2020.12</i>
<b>Academic Excellence award for exchange project, first class</b> , Southeast University	<i>2022.8</i>

## SKILLS

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### **Programming Languages and Frameworks**

Python basic programming, algorithms and machine learning projects

C++ basic programming and algorithms

R basis in programming, data processing and analysis

LaTeX in writing and presentations

Framework for deep learning, Pytorch, Tensorflow, Keras

### **Software mastery**

ArcGIS, QGIS

Data processing software Origin and Tableau

Simulation software SUMO and VISSIM

Excel, Word and PowerPoint

### **Languages**

Native Mandarin fluency in communications and writing

Native English fluency in academic communications and writing

Communication fluency level in Japanese

## RESEARCH INTERESTS AND FOCUSES

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Transportation planning in urban areas, Transportation emissions and air-pollution, Transportation signal and flow control, Reinforcement learning based algorithm optimization and simulation, Data analysis in transportation flow and emissions