ZHIJIE HE

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FIND ME ONLINE

🌐 https://zhijie-he.github.io/

in https://www.linkedin.com/in/zhijie-he

○ https://github.com/Zhijie-He

EDUCATION

EIT DIGITAL MASTER SCHOOL
- Entry University: Université de Nice-Sophia Antipolis, France
- Exit University: Aalto University, Finland
- **Data Science, MSc**

2020 - 2023

YANGZHOU UNIVERSITY
- Software Engineering, B.Eng.

2016 - 2020

SKILLS

- Python · Numpy · Pandas · Pytorch · Tensorflow · Jupyter · Anaconda
- HTML · CSS · JS · MATLAB
- MySQL

LANGUAGES

- Chinese (Native)
- English (Advanced)

PUBLICATIONS

A Multi-objective Model for Multi-skill Project Scheduling Problem considering Perform Efficiency

IEEE

🔗 https://ieeexplore.ieee.org/document/8948152

SUMMARY

Highly self-motivated; Machine Learning Engineer specialized in applying cutting-edge machine learning techniques to solve real-world problems, with experience in carpooling efficiency and video compression optimization. Research experience in computer vision, video compression, and operations research; Extensive experience in development and deployment.

WORK EXPERIENCE

NOKIA & Aalto University   05/2023 - 12/2023
External Researcher & Research Assistant   Espoo, Finland

- Conducted research and development on neural video coding techniques, integrating with the state-of-the-art Versatile Video Coding (VVC) standard to enhance compression performance.
- Successfully introduced a content-adaptive in-loop filter for Versatile Video Coding (**VVC**) working with other in-loop filters, significantly improving compression efficiency.
- Engaged in collaborative efforts with cross-functional teams, leveraging advanced machine learning methodologies to address and solve complex challenges in video compression.
- Executed an exhaustive series of experiments to determine the optimal hyperparameter combination for the proposed model, ensuring maximum efficiency and effectiveness.
- Authored a Master's Thesis titled "**Content Adaptive NN-Based In-Loop Filter for VVC**," which details the development process and impact of the novel in-loop filter on VVC standard compression performance.

DiDi Chuxing   08/2021 - 06/2022
Machine learning intern, AI Labs   Beijing, China

- Implemented a multi-hop carpooling model with the improved multi-objective genetic algorithm, increasing efficiency by 23%.
- Participated in a **user's departure time prediction** project, analyzing users' historical taxi orders, finding the patterns of travel behaviors, and using GBM to build the model.
- Participated in a **traffic prediction** project using GRU and GCN to mine road network temporal and spatial features separately increasing the efficiency by 10%.
- Developed a task assignment system using DDQN (Dueling Deep Q Networks) that **has been deployed in thirteen cities in China.**
- Performed **algorithm optimization** and **product deployment.**

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RESEARCH

🔗 **Physics-based Character Animation with Sampling-based Trajectory Optimization**   05/2023 - 12/2023

3D animation trajectory optimization using sampling-based methods and reinforcement learning
- Implement CEM and CMA-ES algorithms searching for characters' trajectory
- Leveraged **Isaac Gym** for efficient simulation and training, significantly reducing development time and computational resources required.
- Utilized parallel computing on **Slurm** Clusters to enhance processing efficiency, achieving faster iteration times and scalable model training.

🔗 **Automatic Signal Detector**   10/2020 - 03/2021

Computer Vision Project
- Use the Viola-Jones object detection framework to detect faces and eyes.
- Use the **Mean-shift/Cam-shift** algorithm to improve efficiency.
- Use the **histogram back-projection** idea to detect hand.
- Using MLP, CNN, and the Pre-trained Transfer Learning model to train the dataset.

🔗 **Research on Multi-Objective Project Collaborative Planning and Scheduling Model**   03/2018 - 06/2019

MATLAB's implementation and simulation; Genetic algorithm in operation research
- **MPPS**: Implemented a scheduling model with an improved multi-objective NSGA-II algorithm, solving the problem of assigning resources in reality and publishing a paper.
- **MSPS**: Researched further on the field of multi-skill human resources, proposing a new salary strategy to improve employee efficiency, publishing a paper in the IEEE journal.
- Applied for two software copyrights and rated as an excellent student project.