



JIA ZEXI

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EDUCATION

National University of Singapore (NUS) 08/2024 - Present

- M.Sc. Major in **Smart Industries and Digital Transformation**
(Specialization in **Deep Learning for Industry and Computing Foundation II**)
- Courses: Data Structures and Algorithms, Data Analytics for Sense-making, Advanced Topics in Machine Learning, Artificial Intelligence, Software Engineering on Application Architecture

Harbin Institute of Technology (HIT) 09/2020 - 07/2024

- B.Eng. Major in **Computer Science and Technology** (GPA: 89.15/100)
- Core Courses: Data Structures, Algorithm Design and Analysis, Operating Systems, Computer Networks, Database Systems, Software Engineering, Computing Method, Machine Learning, Image Processing, Pattern Recognition

INTERNSHIP EXPERIENCE

Asian Institute of Digital Finance, Singapore, Part-time 09/2024 - Present

Software Engineer, NLP-AD Team

- Joined the development of a **Django-based** web platform by improving user-friendliness, adding new functions, and resolving existing technical issues.
- Enhanced user experience by introducing real-time updates and a subscription-based membership system.
- Implemented performance enhancements including **Redis** caching, while ensuring robust security measures through access control and authentication mechanisms.
- Designed **remote APIs access** for MySQL databases, enabling clients to retrieve sentiment and topic prediction data with optimized server configurations for cloud-based services.
- Managed and optimized **Huawei Cloud** infrastructure for web hosting and database services, balancing performance and cost-effectiveness.

Huawei Technologies Co., Ltd., Nanjing Branch, Full-time 08/2023 - 11/2023

General Software Development Engineer, Data Communications Product Line

- Joined a project team to develop network detection and services tools used at the SOHO Industrial Park of Huawei eKit.
- Used **Git and CodeHub** code repository to create and maintain branches, achieving efficient team collaboration.
- Deployed the advanced usage of ListView and RecyclerView controls in **Android** to ensure smooth scrolling of the interface and real-time data display, resulting in a 6% increase in user praise rate.
- Took advantage of the MpAndroidChart chart drawing component to realize the visual drawing and curve display of complex dynamic data, improving the user experience.
- Displayed detailed information through the user-friendly interface, such as WiFi channels and bandwidth in the current network environment, realizing quantitative assessment of WiFi interference levels.
- Adopted **DevOps** agile development methods and continuously iterated projects to ensure timely delivery of functions.

PROSAGA (Beijing Code Space Technology Co., Ltd.), Part-time 02/2023 - 05/2023

Python Machine Learning R&D Engineer, Algorithm Department

Realized 3D modeling and posture assessment of characters:

- Utilized models such as NERF (Neural Radiance Fields), SMPL-X (Skinned Multi-Person Linear model), and SMPLicit to achieve the generation of a complete 3D character model from a single photo.
- Integrated the 2D image generation model FrankMocap and the portrait and clothing semantic segmentation model to increase the accuracy.

Undertook portrait semantic segmentation and key point detection:

- Developed the portrait segmentation function based on the SHM (Semantic Human Matting) model, acquired in-depth understanding of the latest technologies and methods in the field of portrait segmentation.
- Used T-Net to generate trimap, accurately separating foreground characters and background.
- Leveraged data enhancement technology to improve the robustness of the model, ensuring portrait segmentation effects in different environments and backgrounds.
- Took performance, speed and resource efficiency into account to meet company needs.

SOFTWARE COPYRIGHT

Multifunctional Detection Ship Group System

08/2022 - 03/2023

- **Registration Number:** 2023SR0913395, China Copyright Protection Center-Software Registration Department
- **Authors:** Yu Dong, Zhang Ting, **Jia Zexi**, Xie Ruolin, Zhu Xianlei, Zhang Shaowei, Liu Haoran
- **Position:** Director of **Computer Vision** (Both Hardware and Software)
- **Research Objective:** Develop a multi-functional detection ship system to solve the problem of water areas that cannot be directly reached by humans or where existing observation methods are costly
- **Research Tasks:** Target recognition and tracking, 3D modeling and environment perception, Autonomous docking technology, Integrated application of hardware and edge computing boards, reducing processing time by 12%

COMPETITION EXPERIENCE

Marine Vehicle Design and Production Competition - Object Detection Track, NWPu, China

05/2022 - 08/2022

Group Leader, Independent R&D Project

- Evaluated Faster-RCNN, YOLOv5 and YOLOX for detection scale, object quantity, and performance-inference trade-off per contest guidelines, followed by algorithmic refinement based on YOLOX
- Realized the construction and optimization of the object detection model more closing to the actual application requirements through sea-sky-line detection algorithm developed by the Canny operator
- Stood out of **958 teams** nationwide and achieved **the National First Prize (National ranking: the 3rd place)**

World University Underwater Robot Competition - ROV Track

04/2022 - 08/2022

- Constructed a data set and fine-tuned the yolov5 to achieve small object directional detection
- Implemented model deployment and reasoning test, relying on the ZED binocular camera and **Jetson TX2** edge computing board, resulting in a 9% reduction in processing time
- Leveraged **TensorRT mechanism** to make full use of computational power to accelerate the model reasoning process and realized real-time transmission of the 2D coordinates and depth values of the console target
- Reaped **the National Second Prize**

The Assessment Model of Forest Carbon Sequestration and the Decision Model of Forest Management Plan 02/2022

Supervisor: Associate Professor Dongjie Zhu, HIT

- Used the sklearn library to conduct statistical fitting analysis and predict the amount of carbon dioxide that the forest and its products described in the topic can absorb one hundred years later
- Based on data visualization analysis, called the scipy library to carry out normal curve fitting calculations and obtain the specific parameters of the function, then rationalized the proportion of each functional forest area in the forest
- Received **the Honorable Mention** in the Mathematical Contest in Modeling & Interdisciplinary Contest in Modeling

SELECTED AWARDS

Huawei Intelligent Base Scholarship	Top 5	11/2023
HIT First-Grade Scholarship	Top 3	11/2023
HIT Outstanding Student of the Year	Top 10%	12/2022
HIT Outstanding Student Cadre	Top 5%	12/2021

ADDITIONAL INFORMATION

- Effective Command of English
- Computer Skills:
 - Programming Languages: Python, SQL, C++, Java, HTML/CSS, JavaScript
 - Tools and Frameworks: PyTorch, Scikit-Learn, Flask/Django, SpringBoot, Git, TensorFlow, Ubuntu
- Interests:
 - Badminton, Long-distance running, Bamboo flute-national level 10