

JUNBIAO LI

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🎓 EDUCATION

Dalian University of Technology

Sep. 2020 – Present

Bachelor in Mathematical Basic Science, expected Jun. 2024

Leicester International Institute with double degree of University of Leicester

⚙️ SKILLS

- **Programming Languages:** Expert in Python; Proficient in C++, Rust; Familiarity with Java
- **Server Management:** Experienced in setting up and maintaining FreeBSD servers, running services like Docker and SMB.
- **Networking:** Proficient in networking setups, e.g. OpenWRT, WireGuard.
- **Software Libraries:** Proficient in PyTorch, OpenMMLab, OpenCV, and Open3D
- Fluent in spoken English with strong capabilities in academic reading.

🏆 AWARDS AND HONORS

Kaggle Competition-Detect Sleep States

Sep. 2023 – Dec. 2023

Solo · Bronze Medal · Top 7% (127/1877)

My task is to detect the occurrence of sleep onset and awakening in the accelerometer sequence.

- Developed a model consists of three parts: feature extractor, encoder and decoder.
 - **Feature Extractor:** Extracts an image-like waveform map from the original waveform.
 - **Encoder (DeepLabV3+):** Converts the waveform graph into a 2D heatmap.
 - **Decoder:** Outputs from the heatmap the probability of an event occurring at each time point (sleep, wake).
- Applying NMS (Non-Maximum Suppression) improved the mAP from 0.5 to around 0.7.

Kaggle Competition-Detecting ink on ancient library scrolls

Mar. 2023 – Jun. 2023

Top 32% (390/1249)

The goal of the competition is to use deep learning to read ancient carbonised papyrus scrolls.

- **Model development:** UNet-based models for image segmentation and text recognition.
- **Model optimisation:** Learned how to solve bottlenecks in the model through analysis and tuning. Successfully improved the performance of the model under the f0.5 evaluation function from 0.3 to 0.5 by maximising the pooling of the channel dimensions

China Collegiate Algorithm Design & Programming Challenge Contest

Mar. 2022

Solo · Copper Medal · Top 30%

👥 EXPERIENCE

Computer Science, Great Bay University Guangdong, China

Jul. 2023 – Present

Intern Research Assistant Under the supervision of **Sikun Yang**

Denoising Diffusion Probabilistic Models; Score Matching with Neural Networks (In Progress)

- Engaged in cutting-edge research on Denoising Diffusion Mode, focusing on implementing score matching using neural networks for predictive modeling.
- Conducted an in-depth review of seminal papers, including DDPM, Aligned Diffusion Schrödinger Bridges, Diffusion Schrödinger Bridge with Applications to Score-Based Generative Modeling, and Simulating Diffusion Bridges with Score Matching.

- Successfully completed the model verification in two-dimensional scenarios using Brownian bridges.

Xiaoming Li, Dean of the School of Information Science and Technology commented in the end-of-summer summary that my research approach is logically clear. Professor Sikun Yang thinks that I have a solid foundation in coding and can quickly validate ideas.

XPENG Robotics Guangdong, China

Jul. 2022 – Sep. 2022

Summer Intern Autonomous Driving Deep Learning Intern

XPENG Robotics, subsidiary of XPENG, providing cutting-edge intelligent hardware and software solutions for Xpeng's electric vehicle products.

- 3D Point Cloud Registration and Optimization (Traditional ICP algorithm and Deep Learning)
- Open3D-based GUI tool for rapid point cloud classification
- Stereo Depth Estimation evaluation metrics computation
- Semantic Segmentation data processing and optimization

ROS-based Autonomous Car

Sep. 2022 – May. 2023

Individual Projects

Key modules studied and developed included:

- Automatic localization, mapping, and navigation with LiDAR, cameras, IMUs, and SLAM.
- Intelligent following module utilizing computer vision for pedestrian tracking, drivable space segmentation, and obstacle avoidance.
- Comprehensive visual perception integrating obstacle detection, lane detection, and drivable space prediction for safe decision-making.

College Official Media

Oct. 2020 – Sep. 2022

Television Station Station Manager

Led a team of 80+ at the TV station to successfully film, edit, and livestream over 10 major campus events with 1000+ participants each. Managed recruitment and training, ensuring quality control and technical excellence, with content featured on the college's official platforms.

VOLUNTEER ACTIVITIES

Rural Area Volunteer Teacher

Jul. 2022

Qidong County, Hunan Province, China

- Innovatively implemented interactive and contextualised teaching strategies to significantly enhance student engagement and academic performance, which were well received by students and colleagues.
- Organised and led educational seminars and personalised tutorials that effectively inspired students to be enthusiastic about their future studies and facilitated their imagination of university.