

Zhuorui Zhang

Autonomous Driving Center
XPENG Motors
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EDUCATION

Macau University of Science and Technology (MUST)

Master in Applied Mathematics and Data Science

GPA: 3.92/4.00 (Top 10%)

Macau, China

Sep. 2019 – July 2021

South China University of Technology (SCUT)

Bachelor of Engineering (Materials Science and Engineering)

Guangzhou, China

Sep. 2013 – July 2017

HONORS & AWARDS

- **Admission Scholarship**, Graduate School of Macau University of science and technology, 2019.
- **Successful Participant**, Mathematical Contest in Modeling (USA), 2017.
- **Second Prize of the Scholarship Essay Contest**, SCUT, 2017.

PUBLICATION

- **Zhuorui Zhang**, Junhao Zhou, Yanan Song, and Hong-Ning Dai*, “Cryptocurrencies Price Prediction Using Weighted Memory Multi-channels,” *Blockchain and Trustworthy Systems (BlockSys 2020)*. In: Zheng Z., Dai HN., Fu X., Chen B. (eds) Blockchain and Trustworthy Systems. BlockSys 2020. Communications in Computer and Information Science, vol 1267. Springer, Singapore.
https://doi.org/10.1007/978-981-15-9213-3_39
- **Zhuorui Zhang**, Hong-Ning Dai*, Junhao Zhou, Subrota Kumar Mondal, Miguel Martínez García, and Hao Wang, “Forecasting Cryptocurrency Price Using Convolutional Neural Networks with Weighted and Attentive Memory Channels,” *Expert Systems with Applications*, vol 183, 2021, 115378,
<https://doi.org/10.1016/j.eswa.2021.115378>.

RESEARCH & WORK EXPERIENCE

Automatic Driving Algorithm Engineer

Guangzhou Xiaopeng Motors Technology Company Ltd.

Jul. 2021 – Present

Guangzhou, China

- Explored the multi-sensor fusion technology based on the data from cameras, radars and lidars. Conventional methods and AI-based methods were both adopted.
- Developed several visualization and simulation softwares which help analyze the efficiency of XPeng door's Obstacle Avoidance System.
- Promoted the algorithm development in both 2D and 3D vision tasks. (e.g., proposed novel approaches of intrinsic and extrinsic parameters calibration of cameras and lidars; conduct the work of point cloud completion and semantics segmentation, mesh generalization, texture mapping from photos to 3D space.)

Internship: Image Algorithm Research Assistant

4DAGE Technology Company Ltd.

Oct. 2020 – Mar. 2021

Zhuhai, China

- Conducted various experiments of image algorithms such as image super resolution, image enhancement, object detection and pose estimation.
- Developed a slight and fast pyramidal convolutional neural network architecture for fine-grained image restoration by implicitly learning to perform ISP steps such as image demosaicing, denoising, white balancing, color and contrast correction, demoreing, etc.
- Developed a CycleGAN-based model that can efficiently simulate the process of natural images degradation and generate high resolution images with authentic texture and details.

Project: Cryptocurrency Market Analysis Based on Deep Learning

Faculty of Information Technology, MUST

Advisor: Prof. Hong-Ning Dai

Oct. 2019 – Nov. 2020

Macau, China

- Explored using various machine learning and deep learning models in cryptocurrency market forecasting.
- Developed a convolutional neural network exploiting Weighted & Attentive Memory Channels to help improve the accuracy of cryptocurrencies price prediction.
- Results revealed that the processes of: memory establishing in attentive RNNs, channel-wise recalibrating, convolution & pooling collaborate efficiently and outperforms strong baselines in various evaluation metrics.

Laboratory Assistant

State Key Laboratory of Luminescent Materials and Devices, SCUT

Advisor: Prof. Guoqiang Li

Mar. 2015 – June 2017

Guangzhou, China

- Investigated the preparation of Ohmic Contact Electrode and the epitaxial growth on GaAs substrate.
- Conduct a batch of electron beam evaporation and alloy annealing experiments to fabricate the electrodes and measured the electric resistance by four-probe method.
- Maintained instruments such as the Electron-Beam Vapor System, tube furnace and scanning electron microscope of the laboratory.

Other Services

Teaching Assistant

Faculty of Information Technology, MUST

Sep. 2019 – Jun. 2021

Macau, China

- Helped teachers to correct the students' homework and examination papers and invigilated exams.
- Handled queries and answered questions of different curriculums such as "Computer Programming" and "Signals and Systems" from students.

Service: Reviewer for IEEE Open Journal of the Computer Society

Faculty of Information Technology, MUST

Sep. 2020 – Oct. 2020

Macau, China

- Reviewed the manuscript: "NeuroBit: Modeling and Forecasting of Bitcoin-USD Price using Optimized Neuro-Fuzzy Method".

PROFICIENCY

- **Languages:** English (IELTS: 7.0), Mandarin Chinese, Cantonese and German (basic level).
- **Programming:** MATLAB, R, Python, C/C++, SQL, Windows PowerShell.
- **Softwares/Operating Systems:** Git, VS Code, RStudio, Dev-C++, LaTeX, Windows, Ubuntu.
- **Libraries:** pandas, NumPy, Matplotlib, TensorFlow, PyTorch, Keras.
- **Others:** Piano, Violin, Swimming, Bel Canto, Marathon.

EXTRACURRICULAR & SOCIAL ACTIVITIES

- **Volunteer,** Global Volunteer of AIESEC, SCUT (taught middle school students English in Sri Lanka, 2017).
- **Volunteer,** Reception of scholars, 2016 IPP international conference: Order and Governance in the Contemporary World, Institute of Public Policy, SCUT, 2016.
- **Member,** Union of Social Groups for Students, SCUT, 2014–2016.
- **Member,** Student Union, SCUT, 2014–2016.