ZHANG QIHANG

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EDUCATION BACKGROUND

The Chinese University of Hong Kong, Shenzhen 08/2019 - 06/2023
Bachelor of Engineering

- Major: Computer Science and Engineering

The Chinese University of Hong Kong, Shenzhen 08/2023 - Present
Master of Philosophy

- Major: Computer Science

WORK EXPERIENCE

School of Data Science, CUHK-Shenzhen 09/2023 - Present
Teaching Assistant *Shenzhen*

- Served as a teaching assistant for Computational Laboratory, Database Systems, and Parallel Programming courses in three semesters
- Help professors arrange tutorial course content outlines. Teach tutorial courses each week and answer questions during office hours
- Update the assignment structure and use the latest CS technology in the assignment to make education meet current requirements, such as Triton in Parallel Programming course

Vivo Mobile Communication Co., Ltd 07/2021 - 10/2021
SDE Intern *Shenzhen*

- Developed and maintained the android test engine, completed the development and implementation of multiple automated test components, and achieved excellent results in improving test efficiency and coverage rate
- Extended the engine usage documents according to the development content, improved the work efficiency of the test team, and reduce the communication time
- Ensured that the test engine could support customized testing needs for different countries, and understood the cultural uniqueness of different regions during the development process
- Fulfilled with Google's test engineering requirements to automate the entire process of using Google's Android test benchmarks for mobile phones

RESEARCH EXPERIENCE

Ultra-high Dynamic Range Sensor Fast Tone Mapping and ISP 04/2024 - Present

- Design a hardware-based tone mapping algorithm to achieve LDR display of Ultra-HDR images which have dynamic range close to the human eye (130-140dB)
- Implement an end-to-end learnable simplified ISP algorithm that utilizes a small neural network to estimate the global tone mapping parameters for an image, enabling real-time estimation on a 24-bit video stream
- Incorporate end-to-end differentiability in the design of the ISP algorithm to guarantee future expandability. For example, the ISP's output image can be adapted for target detection tasks, enabling joint optimization between the ISP and the corresponding task, thereby enhancing the output metrics

RGB-IR Sensor ISP and Fast Reflection Removal 08/2023 - 12/2023

- Implement GPU-based RGB-IR sensor image ISP
- Design reflection removal algorithm based on the low reflection property of glass to infrared light, use infrared band information to remove the reflection of the visible light band and provide better multi-spectral images.
- Utilize guided filter to accelerate the feature extraction and fusion from RGB-IR image

LANGUAGE & SKILLS

- **Language**: IELTS: overall: 7.0(R: 8.5/ L: 7.5/ S: 6.0/ W: 6.0)
- **Programming Skills**: Proficient in Python and other programming languages
- **Knowledge**: Proficient in both traditional and deep learning-based image processing algorithms, familiar with each module in image signal processing pipeline