Hanyou Zheng

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Education

Wuhan University, Wuhan, China — Sep 2021 - Present

B.S. in Computer Science, **Hongyi Honor College** , Expected to graduate at Jun 2025
GPA: 3.8 / 4.00
2022-2023 Comprehensive Performance Measurements(second year): Rank 4th / 126
2021-2022 Comprehensive Performance Measurements(first year): Rank 6th / 162

Research Experience

Deep Learning-based Video/Image Process and Coding — Aug 2022 – Present

Undergraduate Internship Supervisor: Prof. Zhenzhong Chen

Deep Learning-based Single Image Super-Resolution

- Building upon the existing work, I employed techniques such as reparameterization and network structure pruning to further reduce the inference time and parameter count of the network.
- Participated in the CVPR 2023 Workshop: NTIRE 2023 challenge on efficient super-resolution, I achieved a top-16 ranking in the main track by reducing the inference time for a single image on a 1080Ti GPU to 30.34ms, with a performance of PSNR$\geq$ 29.00 on DIV2K Validation Set.

Deep Learning-based Space-Time Video Super-Resolution

- Studied inter-frame optical flow estimation and the techniques for motion estimation between adjacent frames.
- Explored effective integration of temporal and spatial features.
- Actively participated in experiments and contributed to the writing of a yet-to-be-published paper.

Deep Learning-based Inter prediction for Versatile Video Coding (VVC)

- Studied knowledge related to video coding, attempting to improve inter-frame prediction issues in VVC (Versatile Video Coding).
- Proposed some effective improvements and conducted a series of experiments with the expectation of producing a research paper.

Project Experience

RISC-V five-stage pipeline CPU design — Jun 2023 - Jul 2023

Verilog and FPGA project Individual Project on Course Computer Organization and Design

- Designed a single-cycle CPU.
- Conducted on-board experiments with a five-stage pipelined CPU that supports instruction hazards and successfully ran test programs.
- Implemented keyboard input and video signal output through PS2 and VGA interfaces.
- Developed a Sudoku game, successfully running it on the CPU on the development board.

Publications

[1] Yawei Li, Yulun Zhang, ..., **Hanyou Zheng**, Yuantong Zhang, Junxi Zhang, Zhenzhong Chen, et al. "NTIRE 2023 Challenge on Efficient Super-Resolution: Methods and Results" *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2023*, pp. 1922-1960

Skills

- Coding Language: C/C++ == Python > Java
- Platform: Windows/Linux
- Deep learning Framework: Pytorch

Awards

Gold Medal, 48th ICPC International Collegiate Programming Contest Asia Regional (Shenyang) Nov 2023
Gold Medal, 48th ICPC International Collegiate Programming Contest Asia Regional (Xi'an) Oct 2023
16th, CVPR 2023 Workshop: NTIRE 2023 challenge on efficient super-resolution Mar 2023
Bronze Medal, 48th ICPC International Collegiate Programming Contest East Asia Final Jan 2024
First Prize, CCF "Sinan Cup" Quantum Computing Programming Challenge (Student Group) May 2023
Silver Medal, CCPC China Collegiate Programming Contest (Weihai) Nov 2022
Gold Medal,Hubei Provincial Collegiate Programming Contest May 2022

Others

- 2021-2022, 2022-2023: Excellent Student Award and First-Class Scholarship, Wuhan University
- 2022-2023: Tianyuan Dic Scholarship, Wuhan University
- 29th CCF Certified Software Professional(CSP): Scored 380 points
- 2022-2023: Outstanding Student Cadre at Wuhan University
- GitHub: https://github.com/zzzhy03