

HEBAO, ZHU

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Address: ChongQing, China

Education Background

ChongQing University, China

Sept. 2023 – Jun. 2027

BSc. Data science and big data

GPA: 3.79/4.0, Rank: 3/67 or 5/240

Relevant Courses: Deep Learning (98/100); Machine Learning (96/100); Data Structures and Algorithms (92/100); Probability & Mathematical Statistics (90/100); Advanced Mathematics (92/100);

Research Projects

Super Sparse DETR: YOLO-Competitive Convergence and Acceleration

Project Leader

Jun. 2025-Nov. 2025

- Investigated the architecture of DETR which based on transformer;
- Performed different sparse and prune skills to DETR. Especially how to hook the key parameter as the standard or score to sparse and prune corresponding components;
- Design distillation method as the key step in training process to bridge the difference between before sparse and after sparse

Tracing the Fusion Pathways of Different Multimodal Large Language Models

Project Leader

Dec. 2025-Aug. 2026

- Led a mechanism-oriented study on mllms, comparing concatenation and unified architectures to analyze how visual and textual representations are fused across transformer layers.;
- Designed and conducted a three-stage analysis pipeline, including layer-wise CKA alignment, attention routing and entropy, and intrinsic-dimensionality analysis, revealing that the fusion mechanism.;

Publications

- **Hebao Zhu.** Super Sparse DETR: YOLO-Competitive Convergence and Acceleration. *CVPR. Finding. 2026*;
- **Hebao Zhu.** Tracing the Fusion Pathways of Different Multimodal Large Language Models. (under review for *NeurIPS.2026*)

Honors & Awards

- **National Scholarship**, ChongQing University 2024
- **First Prize** in the 16th Chinese Mathematics Competitions (State level) 2024
- Chongqing University **Merit Student**..... 2025
- Other Honors & Awards (State level or School level)

Skills

- **Visual Language Models:** Fusion of different modals such as LLaVA, SOLO,
- **Representation Analysis:** feature similarity by CKA/Mutil KNN, feature-space analysis
- **Model Sparsity & Acceleration Proficiency:** pruning and distilling
- **Deep Learning & Computer Vision:** Transformer architecture, DETR-style object detection