Tianhao Huang

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EDUCATION

SHANGHAI JIAO TONG UNIVETSITY Shanghai, China
Undergraduate of Information Security
September 2021 – now

- **GPA: 3.9/4.3 Average Score: 90.42/100**
- **Core Courses: Linear Algebra 94; Data Structure 97.2; Calculus 98 ;**
  Thinking and Methodology in Programming(C++) 89;
  Algorithm (computational) complexity analysis 98.6;

PUBLICATIONS

- "Jigsaw: Taming BEV-centric Perception on Dual-SoC for Autonomous Driving" . Lingyu Sun, Chao Li, Xiaofeng Hou, **Tianhao Huang**, Cheng Xu, Xinkai Wang, Guangjun Bao, Bingchuan Sun, Shibo Rui, and Minyi Guo. in Proceedings of the 45th IEEE Real-Time Systems Symposium (RTSS), Dec. 2024.

- "Sub-model Parallelism: A Scale-out Deployment Method for Large Multi-modal DNNs" . **Huang, Tianhao** and Sun, Lingyu and Hou, Xiaofeng and Zhu, Xiaozhi and Xia, Xinfeng and Wang, Yutong and Chen, Mingxi and Li, Chao. 2024 IEEE 24th International Symposium on Cluster, Cloud and Internet Computing (CCGrid). IEEE, 2024.

- "An End-to-End Benchmarking Tool for Analyzing the Hardware-Software Implications of Multi-modal DNNs" . **Tianhao Huang**, Xiaozhi Zhu, and Mo Niu. 2024. SIGMETRICS Perform. Eval. Rev. 51, 3 (December 2023), 25 – 27.

- "MMBench: Benchmarking End-to-End Multi-modal DNNs and Understanding Their Hardware-Software Implications" . Xu, Cheng and Hou, Xiaofeng and Liu, Jiacheng and Li, Chao and **Huang, Tianhao** and Zhu, Xiaozhi and Niu, Mo and Sun, Lingyu and Tang, Peng and Xu, Tongqiao and others. 2023 IEEE International Symposium on Workload Characterization (IISWC). IEEE, 2023.

TALKS

- **(Online)** "An End-to-End Benchmarking Tool for Analyzing the Hardware-Software Implications of Multi-modal DNNs" . ACM SIGMETRICS, Orlando, Florida, USA, June 19-22, 2023.

- **(In-person)** "Sub-model Parallelism: A Scale-out Deployment Method for Large Multi-modal DNNS" . The 24th IEEE/ACM international Symposium on Cluster, Cloud and Internet Computing. Philadelphia, May 6-9, 2024.

PATENTS AND SOFTWARE

- **MMBench:** End-to-End Benchmarking Tool for Analyzing the System and Architecture Implications of Multi-modal DNNs (https://github.com/xfhelen/MMBench)

RESEARCH EXPERIENCES

TAMING BEV-CENTRIC PERCEPTION ON DUAL-SOC FOR AUTONOMOUS DRIVING SJTU

BEV-centric Perception for Autonomous Driving Sep. 2023 - Aug. 2024

- Deploy BEV-centric networks on dual-SOC using RDMA communication
- Split networks into different TensorRT plan

CUSTOMIZED AND END-TO-END MULTI-MODAL BENCHMARKING TOOL FOR SYSTEM AND ARCHITECTURE IMPLICATIONS

SJTU

Benchmark for Multi-modal DNNs Jan. 2023 - Jun. 2024

- Study different Multi-modal DNNs ' structures and analyze their CPU and GPU execution pattern
- Customize a set of multi-modal neural network workloads of different sizes at inference stage for evaluation.

COURSE PROJECTS

DESIGN A SYSTEM-LEVEL RESOURCE ACCESS AUDITING TOOL

SJTU
Jun. 2023 - Jul. 2023

- Design a system-level resource access auditing tool based on system call hooking

DESIGN A FORUM AND CHAT COMMUNICATION PLATFORM WEBSITE

SJTU
Sep. 2023 - Nov. 2022

- Design an online chat room/forum supporting group and private chat, adding friends and posting

DESIGN A MULTIFUNCTIONAL VIDEO PROCESSOR

SJTU
Feb. 2024 - Apr. 2024

- Design a multifunctional video processor with functions of editing, face bluring, watermark,etc.

AWARDS

- **Scholarship of Shanghai City 2024**
- **Second Place Winner of TCSC SCALE CHALLENGE at IEEE/ACM CCGRID 2024**
- **First Place Winner in the Undergraduate category of the ACM Student Research Competition at SIGMETRICS 2023**
- **University's Scholarship Scheme for Undergraduate Students 2021/22**
- **University's Scholarship Scheme for Undergraduate Students 2022/23**
- **Mathematical Contest In Modeling Meritorious Winner 2023**
- **Shanghai Jiao Tong University-Winning Health Smart Medical Challenge Elite Award in the AI university group 2023**

SKILLS

LANGUAGE : Mandarin Chinese (native speaker), English (CET6 : 544)
COMPUTER : Microsoft Office, C++, python (CCF CSP : 355)