

Ziyu Ying

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RESEARCH KEYWORDS

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|--|---|
| <input type="checkbox"/> Mobile/Edge Computing | <input type="checkbox"/> On-Device Processing |
| <input type="checkbox"/> Video Processing | <input type="checkbox"/> DNN Inference Optimization |
| <input type="checkbox"/> AR/VR & 3D Vision | <input type="checkbox"/> Computer Architecture |

EDUCATION

Penn State University

Aug. 2019-Present

Ph.D., Computer Science and Engineering

- Advisor: Mahmut Kandemir, Chita Das

University of Science and Technology of China (USTC)

Sep. 2015-Jun. 2019

B.E., Electronic Engineering and Information Science

- Advisor: Cong Shen, Wenyi Zhang

RESEARCH EXPERIENCE

High Performance Computing Lab(HPCL), Penn State, PA

Research Assistant

Aug. 2019-Present

- **Algorithm and System Co-Design for Optimizing Emerging Applications:**
 - **Efficient Point Cloud Analysis on Edge Devices:** speed up the point cloud-based CNNs by increasing its regularities and utilizing the edge GPUs. [*Under Review*]
 - **Pushing Point Cloud Compression to the Edge:** for fast and efficient point cloud compression on edge/embedded devices through parallelization. [*MICRO2022*]
 - **Accelerate Neural Network Inference on Mobile/edge Devices:** energy-efficient DNN inference on edge device by exploiting the reuse opportunities across video frames.[*ICDCS2022*]
- Supervised by Prof. Mahmut Kandemir & Prof. Chita Das

Wireless Information Network Lab, USTC, Hefei

Research Assistant

Jan. 2019-May 2019

- Parameter Estimation

Wireless@HKU Group, Hong Kong

Research Assistant

Jul. 2018-Aug. 2018

- Edge Training

The Laboratory for Future Networks, USTC, Hefei

Research Assistant

Sep. 2017-Dec. 2018

- Reinforcement Learning and Wireless Communication

WORK EXPERIENCE	Meta Platforms, Inc. <i>Software Engineering Intern @ Assistant Platform</i> May. 2022-Aug. 2022 <ul style="list-style-type: none"> Library support for the Assistant Framework; Develop Apps that can be invoked/enabled by the Assistant.
PUBLICATIONS	<ul style="list-style-type: none"> Ziyu Ying, Shuli Zhao, Sandeepa Bhuyan, Cyan Subhra Mishra, Mahmut T. Kandemir, and Chita R. Das, Pushing Point Cloud Compression to the Edge. (MICRO 2022) Ziyu Ying, Shulin Zhao, Haibo Zhang, Cyan Subhra Mishra, Sandeepa Bhuyan, Mahmut T. Kandemir, Anand Sivasubramaniam, and Chita R. Das, Exploiting Frame Similarity for Efficient Inference on Edge Devices. (ICDCS 2022) Sandeepa Bhuyan, Shulin Zhao, Ziyu Ying, Mahmut T. Kandemir, and Chita R. Das, End-to-end Characterization of Game Streaming Applications on Mobile Platforms. (SIGMETRICS 2022) Shulin Zhao, Haibo Zhang, Cyan Subhra Mishra, Sandeepa Bhuyan, Ziyu Ying, Mahmut T. Kandemir, Anand Sivasubramaniam, and Chita R. Das, HoloAR: On-the-fly Optimization of 3D Holographic Processing for Augmented Reality. (MICRO 2021). Shulin Zhao, Haibo Zhang, Sandeepa Bhuyan, Cyan Subhra Mishra, Ziyu Ying, Mahmut T. Kandemir, Anand Sivasubramaniam, and Chita R. Das, Déjà view: spatio-temporal compute reuse for energy-efficient 360° VR video streaming. (ISCA 2020). Zhiyang Wang, Ziyu Ying, Cong Shen, OPPORTUNISTIC SPECTRUM ACCESS VIA GOOD ARM IDENTIFICATION. (GlobalSIP 2018).
TEACHING EXPERIENCE	Pennsylvania State University <i>Teaching Assistant</i> CMPSC 200: Programming for Engineers with MATLAB
AWARDS	<ul style="list-style-type: none"> MICRO Travel Grant 2022 Outstanding Student Scholarship of USTC 2016-2018
RELEVANT COURSE- WORK	Pennsylvania State University (Graduate) ✧Operating System Design ✧Advanced Compiler Construction ✧Introduction to Computer Architecture ✧Algorithm Design and Analysis ✧Large-Scale Machine Learning ✧Computer Vision ✧Image Processing
SKILLS	<ul style="list-style-type: none"> Programming & Tools: C/C++, Python, Java, Kotlin, CUDA, Git, Android SDK, Shell, Pytorch, TensorFlow, Matlab Operating System: Linux, Windows, MacOS