

HAO ZHOU

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RESEARCH INTERESTS

Mobile and Wearable Computing, Transfer Learning, GPGPU

EDUCATION

The Pennsylvania State University

Doctor of Philosophy in Computer Science and Engineering

State College, PA, USA

September 2021 - Now

The University of Mississippi

Master of Science in Computer Science

Oxford, MS, USA

September 2019 - May 2021

Bachelor of Science in Computer Science

September 2016 - May 2019

North China University of Technology

Bachelor of Science in Computer Science

Beijing, China

September 2014 - May 2016

PUBLICATIONS

[J.1] Learning on the Rings: Self-Supervised 3D Finger Motion Tracking using Wearable Sensors

Hao Zhou*, Taiting Lu*, Yilin Liu, Shijia Zhang, Mahanth Gowda

ACM IMWUT/UbiComp 2022

[C.3] DACHash: A Dynamic, Cache-Aware and Concurrent Hash Table on GPUs

Hao Zhou, David Troendle, Byunghyun Jang

IEEE SBAC-PAD 2021, (**Best Paper Award**)

[C.2] One-Class Model for Fabric Defect Detection

Hao Zhou, Yixin Chen, David Troendle, Byunghyun Jang

MLTEC 2021

[C.1] Exploring Faster RCNN for Fabric Defect Detection

Hao Zhou, Byunghyun Jang, Yixin Chen, David Troendle

IEEE AI4I 2020

RESEARCH EXPERIENCE

Graduate Research Assistant

The Pennsylvania State University

Advisor: Dr. Mahanth Gowda

September 2021 - Now

State College, PA, USA

- Develop an IMU-based self-supervised learning model that tracks 3D finger motions.
 - Design a self-supervised learning framework to alleviate the need for labeled IMU data
 - Conduct a systematic user study to understand system's performance from different perspectives.

Graduate Research Assistant,

The University of Mississippi

Advisor: Dr. Byunghyun Jang

September 2019 - May 2021

Oxford, MS, USA

- Develop a Concurrent Data Structure (Hash Table) on GPU.
 - Optimize hash table performance by considering memory access pattern and thread divergence.
 - Utilize warp synchronization to minimize thread divergence.
 - Leverage fast cache for data re-usage.
- One class model for solving fabric defect detection.

- ➡ Utilize Gabor filters
- ➡ Leverage Variational Autoencoder to reduce dimension of Gabor features.
- ➡ Nearest Neighbor density estimation for detection.
- Optimized Faster Region-Based Convolutional Neural Network(Faster RCNN) for fabric defect detection.
 - ➡ Studied how Faster RCNN works as a two-stage object detector.
 - ➡ Analyzed performance of Faster RCNN on fabric images.

Undergraduate Research Assistant,

The University of Mississippi

Advisor: Dr. Dr. H. Conrad Cunningham

September 2017 - September 2018

Oxford, MS, USA

- Develop a tool that extends the Markdown source format to enable specification of more accessible interactive and multimedia features. This work potentially enhances the ability of authors and publishers to produce broadly accessible documents.

WORK EXPERIENCE

Undergraduate Teaching Assistant

The University of Mississippi

September 2018 - September 2019

Oxford, MS, USA

- Tutored students taking computer science courses (e.g., Java, C/C++ and Data Structure) in their assignments and projects
- Assisted instructor grading students' programming assignments for Organization of Programming Languages

HONORS & AWARDS

Outstanding TA Award, The Pennsylvania State University

Sep 2022

Best Paper Award, SBAC-PAD 2021

Oct 2021

Summa Cum Laude, University of Mississippi (UM)

May 2019

International Undergraduate Student Scholarship, UM

2017 - 2019

National Scholarship for Exchange Student

2016

National Scholarship, Ministry of Education of the People's Republic of China

2015

Outstanding Freshmen, North China University of Technology

2014