

HAO ZHOU

W343 Westgate building, State College, Pennsylvania, USA

hfz5190@psu.edu ◊ <https://hzhou3.github.io/>

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

Bachelor of Science in Computer Science

Oxford, MS, USA

September 2019 - May 2021

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

(Best Paper Award)

IEEE SBAC-PAD 2021

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

Hao Zhou, Yixin Chen, David Troendle, Byunghyun Jang

MLTEC 2021

[C.3] 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 hand motions in 3D.

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.
- ➡ Neareast 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

<i>Outstanding TA Award, The Pennsylvania State University</i>	Sep 2022
<i>Best Paper Award, SBAC-PAD 2021</i>	Oct 2021
<i>Summa Cum Laude, University of Mississippi (UM)</i>	May 2019
<i>International Undergraduate Student Scholarship, UM</i>	Fall 2017 - Spring 2019
<i>National Scholarship for Exchange Student</i>	2016
<i>National Scholarship, Ministry of Education of the People's Republic of China</i>	2015
<i>Outstanding Freshmen, North China University of Technology</i>	2014