HAO ZHOU

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RESEARCH INTERESTS

Mobile and Wearable Computing, Transfer Learning, GPGPU

EDUCATION

The Pennsylvania State University — State College, PA, USA
Doctor of Philosophy in Computer Science and Engineering — *September 2021 - Now*

The University of Mississippi — Oxford, MS, USA
Master of Science in Computer Science — *September 2019 - May 2021*
Bachelor of Science in Computer Science — *September 2016 - May 2019*

North China University of Technology — Beijing, China
Bachelor of Science in Computer Science — *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.1] Exploring Faster RCNN for Fabric Defect Detection
Hao Zhou, Byunghyun Jang, Yixin Chen, David Troendle
IEEE AI4I 2020

RESEARCH EXPERIENCE

Graduate Research Assistant — *September 2021 - Now*
The Pennsylvania State University — State College, PA, USA
Advisor: Dr. Mahanth Gowda

- 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

Graduate Research Assistant, — *September 2019 - May 2021*
The University of Mississippi — Oxford, MS, USA
Advisor: Dr. Byunghyun Jang

- 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, *September 2017 - September 2018*
The University of Mississippi Oxford, MS, USA
Advisor: Dr. Dr. H. Conrad Cunningham

➳ 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 *September 2018 - September 2019*
The University of Mississippi 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