Xiao Hu

Email: hu440@purdue.edu
Phone: (1)832-276-2101
Webiste: https://xiaohu.info

Address: 2130 Cumulus Ct.,
West Lafayette, 47906 IN

RESEARCH INTERESTS	Low-Power Computer Vision, Unmanned Aerial Vehicle, Human-Computer Interaction, Data Visualization and Analysis, Full-stack Web Development.

EDUCATION

Purdue University, West Lafayette — May, 2020
Bachelor in Computer Science, minor in Mathematics — GPA: 3.4/4
Purdue University, West Lafayette — May, 2022
Master (thesis) in Electrical and Computer Engineering — GPA: 3.5/4

TECHNICAL SKILLS

Programming languages: Python, C, Java, JavaScript, HTML, CSS.
Database: MySQL, PostgreSQL
Tools/Framework: Django, Jekyll, Tableau, GitHub.
Languages: English(fluent), Chinese(native).

PAPERS

1. Abhinav Goel, Caleb Tung, Xiao Hu, James C. Davis, George K. Thiruvathukal, Yung-Hsiang Lu. **Efficient Computer Vision on Edge Devices withPipeline-Parallel Hierarchical Neural Networks**. *27th Asia and South Pacific Design Automation Conference* (ASP-DAC)

2. Abhinav Goel, Caleb Tung, Xiao Hu, Haobo Wang, James C. Davis, George K. Thiruvathukal, Yung-Hsiang Lu. **Low-Power Multi-Camera Object Re-Identification using Hierarchical Neural Networks**. *2021 ACM/IEEE International Symposium on Low Power Electronics and Design* (DAC) PDF

3. Xiao Hu, Ming-Ching Chang, Yuwei Chen, ... **The 2020 Low-Power Computer Vision Challenge**. In *IEEE International Conference on Artificia Intelligence Circuits and Systems* (AICAS), Online, March 2021. PDF

4. Isha Ghodgaonkar, Abhinav Goel, ... Xiao Hu, Yung-Hsiang Lu, George K. Thiruvathukal. **Observing Responses to the COVID-19 Pandemic using Worldwide Network Cameras**. In *Computer and Society, 2020.* PDF

5. Xiao Hu, Haobo Wang, Anirudh Vegesana, Gore Kao, Somesh Dube,Kaiwen Yu, Shuo-han Chen, Yung-Hsiang Lu, Ming Yin. "Crowdsourcing Detection of Sampling Biases in Image Datasets". In *Proc. The Web Conference* (WWW), Taipei, Taiwan, April 2020. PDF

6. Sangpil Kim, Hyung-gun Chi, Xiao Hu, Karthik Ramani. **A Large-scale Mechanical Components Benchmark for Deep Neural Networks**. In *the European conference on computer vision* (ECCV), online, August 2020. PDF

7. Sangpil Kim, Hyung-gun Chi, Xiao Hu, Anirudh Vegesana, Karthik Ramani. **First-Person View Hand Segmentation of Multi-Modal Hand Activity Video Dataset**. In *The British Machine Vision Association* (BMVC), online, September 2020. PDF

8. Sergei Alyamkin, ... Xiao Hu, ... George K. Thiruvathukal, and Yung-Hsiang Lu. **Low-Power Computer Vision: Status, Challenges, and Opportunities**. In *IEEE Journal on emerging and selected topics in circuits and systems*, Vol. 9, No. 2, June 2019. PDF

9. Xiao Hu, Haobo Wang, Somesh Dube, Anirudh Vegesana, Kaiwen Yu, Yung-Hsiang Lu, Ming Yin. "Discovering Biases in Image Datasets with the Crowd". In *the 7th AAAI Conference on Human Computation and Crowdsourcing* (HCOMP), Skamania Lodge, WA, October 2019. PDF

EXPERIENCE

Qualcomm **May 2021 - August 2021**
2021 Summer Intern - Hardware Engineer *(remote) West Lafayette, IN*

- Developed efficient computer vision algorithms for visual SLAM/tracking on the lightweight embedded platform.
- Experimented the classical and existing deep learning based computer vision techniques for multi-camera and moving-camera tracking localization.
- Designed and wrote a Convolutional Neural Network from scratch that takes customized optical flow data as input and predicts the 6DOF pose estimation.

Purdue CAM2 Research Group **May 2018 - Present**
Research Assistant *West Lafayette, IN*

- **WebUI Team Leader** Jun 2018 - Dec 2018
    - Full-stack web development using Django (https://www.cam2project.net/)
- **Fairvision Team Leader** Jan 2019 - May 2021
    - Lead the team to develop a Crowdsoucing workflow that can detect and report image dataset biases. Eventually led 2 published papers at 2019 HCOMP and 2020 WWW (see PAPERS).
    - Developed a web application with Django as the framework, Heroku as the server, Amazon S3 as the database. The experiments are conducted on Amazon Mechanical Turk (AMT). Build a quality control server hosted on GCloud that is used to filter the inputs from the crowd workers.
- **Drone Video Team Leader** Oct 2019 - May 2021
    - Create drone-captured videos and build evaluation system for 2020 Low Power Computer Vision Competition (LPCVC) UAV Video Track and 2021 LPCVC Drone Video Track. Tasks included:
        1. Optical Character Recognition (OCR).
        2. Multi-object Detection and Tracking.
        3. Semantic Segmentation.
    - Drones used: Hubsan Zino Pro, DJI Mavic Mini, DJI Mavic Air, DJI Mavic Pro.

Purdue C-Design Lab **Aug 2019 - Jun 2020**
Research Assistant *West Lafayette, IN*

- Work with a PhD student and a master student to collect, build, and evaluate a mechanical component benchmark (MCB). . Published 2 papers as co-authors at 2020 ECCV and 2020 BMVC.
- Website: https://engineering.purdue.edu/cdesign/wp/category/main/2020/

2020&2021 Low-Power Computer Vision Challenge **Nov 2018 - Present**
Manager *West Lafayette, IN*

- Lead the team to build the submission website lpcv.ai and the automatic evaluation server lpcv.ai.
- Lead the paper published at 2021 AICAS.

TEACHING ASSISTANT

- **CS 183**: Introduce new Computer Science students to various programming tools which will aid them in their Computer Science
- **ECE 264**: Introduction to C Programming.