Shihao Wang

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Education

- **Technical University of Munich** — Munich, Germany
  Exchange student in Informatics — *Apr. 2019 – Aug. 2019*
- **McGill University** — Montreal, QC
  Exchange student in Computer Science; GPA: 3.85/4 — *Aug. 2017 – Jan. 2018*
- **Hong Kong Baptist University** — Hong Kong
  B. Sc. (Hons.) in Computer Science; GPA: 3.54/4, ***Top-3 in class.*** — *Aug. 2015 – Jun. 2019*
  Graduated with ***First Class Honours*** *and* ***Science Elite Graduate*** *(10 students)*

Research Experience

- **Hong Kong Baptist University** — Hong Kong SAR
  Research Assistant, Advisor: Prof. Chu, Xiaowen — *Sep. 2019 - Present*
  - **Noisy-labeled Skin Disease Image Classification via Weakly-supervised Learning (Ongoing)**:
    Collected noisy skin disease images using from search engines.
    Experimenting weakly-supervised methods to learn from noisy label images.
  - **Object Segmentation with Polarization Cues (Ongoing)**:
    Collected and processed a set of photos taken by a camera with built-in polarization CMOS.
    Experimented existing object segmentation method to segment images with polarization cues.
    Proposed and experimenting an object segmentation method for polarized images.
  - **Benchmarking Energy Efficiency of GPU**:
    Developed functions to benchmark the GPU energy efficiency on commonly used deep learning models.

  Student RA and Honours Project, Supervisor: Prof. Chu, Xiaowen — *Jun. 2018 - Apr. 2019*
  - **Dermatological Image Diagnosis by Deep Learning**:
    Built two datasets containing 10 and 100 classes of clinical dermatology images, with bounding box annotations
    Benchmarked a series of existing image classification algorithms on both datasets.
    Proposed a novel two-stage method based on Faster R-CNN to improve classification accuracy to 82.66%.
    Published a paper at KDDBHI 2019.

  Student Research Assistant, Supervisor: Prof. Chu, Xiaowen — *Jun. 2017 - Aug. 2017*
  - **Optimizng "EPPMiner" with SIMD**:
    Analyzed a set of cross-platform benchmarking software "EPPMiner" for evaluating hardware energy efficiency.
    Optimised the sourece code of "EPPMiner" with SIMD instructions and OpenMP parallelization.
- **Technical University of Munich** — Munich, Germany
  Machine Learning Engineer, TUM Phoenix Robotics — *Apr. 2019 - Aug. 2019*
  - **Road Sign Recognition System for Autonomous Vehicle**:
    Created a real-time system for a autonomous driving model car to detect and classify road signs.
    Deployed the system on a model car powered by Intel Nuc and Nvidia Jetson TX2 accerelated by TensorRT.

Teaching Experience

- **Hong Kong Baptist University** — Hong Kong SAR
  Teaching Assistant — *Sem. 1, 2017; Sem. 2, 2018*
  - **Teaching Assistant**:
    Served as TA in course COMP1005 "Essence of Computing" and COMP2016 "Database Management".
    Worked on teaching, tutoring and evaluating assessments.

  Coach — *Sem. 2. 2018, Sem. 2. 2019*
  - **ASC Student Supercomputer Competition Team**:
    Conducted training sessions to teach basic knowledge in supercomputer, optimisation and deep learning.
    Worked on teaching, tutoring and evaluating assessments.

Work Experience

- **Yi-Yuan Intelligence Co., Ltd.** Shenzhen, China
  Software Engineer *Feb. 2019 - Apr. 2019*
  - **Skin Quality Analysis with Deep Convolutional Neural Network**:
    Developed a set of skin analysis software based on convolutional neural networks to evaluate skin quality.
  - **Neural Network Model Inference with C++**:
    Deployed and sped up CPU based neural network inference for online services with C++.

Publications

- Xin He, **Shihao Wang**, Shaohuai Shi, Zhenheng Tang, Yuxin Wang, Ronghao Ni, Zhihao Zhao, Xiaofeng Zhang, Xiaoming Liu, Zhili Wu, Wu Yu, and Xiaowen Chu, "Computer-Aided Clinical Skin Disease Diagnosis Using CNN and Object Detection Models", KDDBHI Workshop @ IEEE International Conference on Big Data 2019

Projects

- **Skinsite**: Website created for skin disease online testing and collection of further data.
- **Fatty Liver Leveling Tool**: Algorithm classifying levels of fatty liver by image processing and K-means.
- **Road-sign Detection System**: Real-time road-sign recognition system for autonomous driving car.
- **EPPMiner**: Benchmarking software testing energy efficiency for hardwares through common algorithms.

Skills

- **Languages**: Python, Java, C, C++, LaTeX, etc.
- **Software**: Linux, Git, Vim, LabVIEW, ImageJ, etc.
- **Tools & Libraries**: PyTorch, Keras, OpenCV, OpenMP, CUDA, etc.

Honours

Scholarships:

- University Exchange Scholarship *2019*
- CS Departmental Outreach Scholarship *2018*
- **HKSAR Government Talent Development Scholarship** *2017*
- Outstanding Student Scholarship *2017*
- Undergraduate Scholarship in Computer Science *2017*

Awards:

- Science Elite Graduate *2019*
- MI Asia Award *2019*
- **Silver Award, HUAWEI Cloud AI Developer Contest** *2019*
- Second class award, ASC19 Supercomputer Competition *2019*
- **First class award, ASC17 and ASC18 Supercomputer Competition** *2017, 2018*
- Summer Research Fellowship, HKBU *2017, 2018*
- Third prize, Enactus China National Competition *2016, 2017*
- First prize, Enactus Hong Kong Regional Competition *2016, 2017*
- President's Honour Roll *2016, 2017, 2018, 2019*

Leadership

- Team Leader, HKBU ASC Student Supercomputer Team *2018 - 2019*
- Member, Science Elite Programme (10 students/year), HKBU Faculty of Science *2016 - 2019*
- Vice-president, HKBU Enactus Social Entrepreneur Club *2016 - 2017*

Professional Membership

- Student Member, Hong Kong Institute of Engineers (HKIE) *2016 - 2019*