Chih-Chun Chang

chih-chun.chang@wisc.edu in/chih-chun-chang-749713163/ github.com/chih-chun-chang +1 3854619617

Profile

I am a second-year Ph.D. student at the Department of Electrical and Computer Engineering at the University of Wisconsin-Madison, advised by Prof. Tsung-Wei Huang. My research centers around heterogeneous computing and parallel computing, specifically exploring high-performance computing techniques to accelerate graph partitioning algorithms using C++ and CUDA. Currently, I'm submitting the related paper to ICPP'24.

Education

PhD student in Computer Engineering *University of Wisconsin at Madison* **USA** *08/2023 - present*
- Focus on parallel and heterogeneous computing for the graph partitioning algorithm using Taskflow, C++, and CUDA
- Relevant Courseworks: High Performance Computing, Design Automation, and Compiler

PhD student in Computer Engineering *University of Utah* | GPA:4.0/4.0 **USA** *01/2023 - 07/2023*
- Relevant Courseworks: Heterogeneous Computing

M.S. in Computer Science *National Tsing-Hua University* | GPA:4.09/4.3 **Taiwan** *08/2019 - 05/2022*
- Thesis: Performance Improvements of Memristor-based Spiking Neural Networks with the Process Variation
- Proposed an efficient training and inference algorithm on GPUs for memristor-based spiking neural network accelerators
- Designed a hardware-aware training algorithm to counteract process variation in spiking neural network models
- Relevant Courseworks: Deep Learning, Natural Language Processing, and Multicore System Design

B.S. in Electrical Engineering *National Tsing-Hua University* | GPA:3.39/4.3 **Taiwan** *08/2013 - 05/2017*
- Project: Designed and implemented a pattern matching algorithm integrated with the YOLO object detection CNN model on the NVIDIA TX2 GPU for robotic arm control

Work Experience

Software Engineer *HOPE English* **Taiwan** *01/2019 - 07/2019*
- Created a software tool that automatically adjusts the volume balance of audio files
- Designed an AWS-based auxiliary customer service system using ML algorithms, boosting the company's revenue by $500,000

Research Assistant *NTU IoX Center* **Taiwan** *06/2017 - 08/2018*
- Developed a face recognition system for Android platforms using the transfer learning technique, achieving up to 99% classification accuracy
- Designed a data visualization web interface for analyzing data of human-computer interaction in Android devices

Research Assistant *DIGITAL DRIFT* **Taiwan** *08/2016 - 05/2017*
- Developed an accurate food and dishes classification model for a mobile application on both iOS and Android
- Optimized the memory footprint of the classification model while maintaining accuracy through the quantization technique

Publications

- Boyang Zhang, Dian-Lun Lin, Che Chang, Cheng-Hsiang Chiu, Bojue Wang, Wan Luan Lee, Chih-Chun Chang, Donghao Fang, and Tsung-Wei Huang, "G-PASTA: GPU Accelerated Partitioning Algorithm for Static Timing Analysis," ACM/IEEE Design Automation Conference (DAC), San Francisco, CA, 2024
- Chih-Chun Chang and Tsung-Wei Huang, "uSAP: An Ultra-Fast Stochastic Graph Partitioner," IEEE High-performance and Extreme Computing Conference (HPEC), virtual, 2023
- Chuang-Wen You, Ya-Fang Lin, Yaliang Chuang, Ya-Han Lee, Pei-Yi Hsu, Shih-Yao Lin, Chih-Chun Chang, Yi-Ju Chung, Yi-Ling Chen, Ming-Chyi Huang, Ping-Hsuan Shen, Hsin-Tung Tseng and Hao-Chuan Wang, "SoberMotion: Leveraging the Force of Probation Officers to Reduce the Risk of DUI Recidivism", ACM International Joint Conference on Pervasive and Ubiquitous Computing (ACM UbiComp), Singapore, 2018 [Distinguished Paper Award]
- Pei-Yi Hsu, Ya-Fang Lin, Jian-Lun Huang, Chih-Chun Chang, Shih-Yao Lin, Ya-Han Lee, Chuang-Wen You, Yaliang Chuang, Ming-Chyi Huang, Hsin-Tung Tseng, and Hao-Chuan Wang, "A Mobile Support System to Assist DUI Offenders on Probation in Reducing DUI Relapse", ACM International Joint Conference on Pervasive and Ubiquitous Computing (ACM UbiComp), Hawaii, 2017

Award

- Innovation award in IEEE HPEC Challenge 2023
- Distinguished Paper Award in ACM UbiComp 2018
- Champion in NVIDIA Smart Embedded Robotics Challenge 2016

Additional Information

- Technical Skills: C++ / CUDA, Python
- Languages: Chinese [Native], English