Chih-Chun Chang

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Education

PhD student in Computer Engineering *University of Wisconsin at Madison* *Aug 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 *Jan. 2023 - July 2023*
- Relevant Courseworks: Heterogeneous Computing

M.S. in Computer Science *National Tsing-Hua University* | GPA:4.09/4.3 *Aug. 2019 - May 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 *Aug. 2013 - May 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

Graduate Intern *Cadence Design Systems* **CA, USA** *May 2024 - Aug. 2019*
- Responsible for designing, developing, troubleshooting and debugging software programs in the areas of static timing analysis with a focus on statistical analysis in presence of signal integrity effects
- Build highly scalable, distributed and incremental statistical static timing analysis solutions in C++ and CUDA

Software Intern *HOPE English* **Taipei, Taiwan** *Jan. 2019 - July 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* **Taipei, Taiwan** *June 2017 - Aug. 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* **Hsinchu, Taiwan** *Aug. 2016 - May 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

- Chih-Chun Chang, Boyang Zhang, and Tsung-Wei Huang "GSAP: A GPU-Accelerated Stochastic Graph Partitioner", ACM International Conference on Parallel Processing (ICPP), Gotland, Sweden, 2024
- 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