

EN-MING HUANG

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EDUCATION

Bachelor of Science, Computer Science

National Tsing Hua University, Hsinchu, Taiwan.

Overall GPA: 4.21/4.30 | **Major GPA:** 4.26/4.30

Class ranking: 6/145

Sept. 2020 - present

PUBLICATION

- **WER: Maximizing Parallelism of Irregular Graph Applications Through GPU Warp Equalizer**, Under review to the *55th Annual IEEE/ACM International Symposium on Microarchitecture (MICRO)*, 2023
En-Ming Huang, Bo-Wun Cheng, Meng-hsien Lin, Chun-Yi Lee, Tsung-Tai Yeh
- **COLAB: Collaborative and Efficient Processing of Replicated Cache Requests in GPU**, *The 28th Asia and South Pacific Design Automation Conference (ASP-DAC)*, 2023
Bo-Wun Cheng, En-Ming Huang, Chen-Hao Chao, Wei-Fang Sun, Tsung-Tai Yeh, Chun-Yi Lee
- **Remote Access Tag Array for Efficient GPU Intra-Cluster Data Sharing**, *The 24th Workshop on Synthesis And System Integration of Mixed Information Technologies (SASIMI)*, 2022
Bo-Wun Cheng, En-Ming Huang, Chen-Hao Chao, Wei-Fang Sun, Tsung-Tai Yeh, Chun-Yi Lee
- **Optimization of Multi-Class 0/1 Knapsack Problem on GPUs by Improving Memory Access Efficiency**, *Journal of Supercomputing*, 2022
En-Ming Huang (first author) and Jerry Chou
Extended from the project of **Solving 0/1 Knapsack Problem on GPU** in Parallel Programming course.

COMPETITION EXPERIENCE

2022 SC22 Student Cluster Competition | **Overall winner**

Nov. 2022

- Compete with other international college student contestants (9 teams) including MIT, UCSD, UT Austin, Nanyang Technological University, etc.
- The competition includes building our own cluster computer, running HPL benchmarks, compiling scientific applications, profiling CPU & GPU performance, and optimizing execution efficiency.

2021 APAC HPC-AI Competition | **3rd Place** among 37 teams

May 2021 - Oct. 2021

- Compete with international college student contestants including Beijing Tsing Hua University and Nanyang Technological University.
- Our team built and optimized several applications on the supercomputer of Singapore's National Supercomputing Center.

2020 ICPC Asia Taipei-Hsinchu Site | **Gold Award**

Nov. 2020

- ICPC, the International Collegiate Programming Contest is an algorithmic programming contest for college students, requires comprehensive knowledge of data structures and algorithm.
- Teams of three, work to solve over 10 real-world problems under 5 hours.
- Our team won Gold Award, 10th place among 101 teams.

TEACHING EXPERIENCE

Working contents: (1) Designed homework assignments; (2) Reviewed homework codes and graded students' reports; (3) Helped students resolving problems

Teaching Assistant - CS5422 Parallel Programming (Offered in English)

Fall 2021 & 2022

Teaching Assistant - EEC52070 Logic Design Laboratory (Offered in English)

Fall 2022

Teaching Assistant - CS1355 Introduction to Programming (I)

Fall 2021

Teaching Assistant - CS1356 Introduction to Programming (II)

Spring 2022

Teaching Assistant - CS4111 Introduction to Parallel Computing

Spring 2022 & 2023

HONORS

- Pan Wen Yuan Foundation Scholarship** 2022
- Top 1% among the department of Computer Science
- Zhu Shun Yi ZYXEL Scholarship** 2023
- Top 1% among 145 CS junior students

WORKING EXPERIENCE

- R&D Engineer Intern at Synopsys Inc** 2022 Jul.-Aug.
- Member of Legalization, Silicon Realization Group (SRG)
 - Project: ML-Based Pin Access DRC Predictor

SERVICE

- External Reviewer - Asia and South Pacific Design Automation Conference 2023 (ASP-DAC 23')** 2022

SELECTED PROJECTS

- Solving 0/1 Knapsack Problem on GPU | Parallel Programming** Fall 2020
- Accelerate 0/1 Knapsack Problem on GPU by modifying the dynamic programming algorithm to explore data parallelism for further optimizations targeted for GPU architecture.
 - Extended to be the paper **Optimization of Multi-Class 0/1 Knapsack Problem on GPUs by Improving Memory Access Efficiency** with Jerry Chou, the advisor of Parallel Programming course.
- Chinese Numerals Recognition with Deep Learning on FPGA | Logic Design Laboratory** Fall 2021
- Ported a 3-layer fully connected network with 60,000 parameters to Xilinx Basys 3 FPGA board, which has only 1.8Mb of memory.
 - Design modularized computing elements using verilog to support pipelining and parallel computing.
 - Inferencing time is 41 μ s, close to modern CPU which is about 20 ~ 40 μ s.
 - Graded as the best project among the class

SKILLS

- **Relevant Courses Taken:** Data Structure, Logic Design and Laboratory, Parallel Programming
- **Programming Languages:** C++, Python, CUDA, Verilog, JavaScript
- **Machine Learning Frameworks:** TensorFlow, Pytorch
- **Others:** Linux, System management, Git