Guannan Guo

Github: https://github.com/gguo4 Email: guannan4@gmail.com

EDUCATION:

University of Illinois at Urbana-Champaign (UIUC), IL

Ph.D candidate in Electrical and Computer Engineering GPA:3.8/4.0 Expected Graduation in 2022

Bachelor of Science in Computer Engineering GPA:3.9/4.0 Graduated with Highest Honor in May 2017

Bachelor of Science in Applied Mathematics GPA: 3.9/4.0 Graduated with High Distinction in May 2017

Related Coursework: Parallel Programming (GPU and CPU), Artificial Intelligence, Computational Inference, Machine Learning, Algorithms, Communication Networks, Distributed System, Computer Architecture

OPEN-SOURCE PROJECTS:

- **Cpp-Taskflow:** Fast Task-Based Parallel Programming using Modern C++
- **Dtcraft:** A General-purpose Distributed Programming System using Data-parallel Streams
- **OpenTimer:** A High-performance Static Timing Analysis Tool for VLSI Systems

AWARDS:

Best Open Source Software Award (DtCraft), 2018 ACM Multimedia Conference Fall 2018

Best Poster Award (Cpp-Taskflow), the 2018 Official C++ Conference (CPPCON) Fall 2018

1st Place in Operating System Design Competition, Computer Systems Engineering (ECE 391) Fall 2014

WORK EXPERIENCE:

Software Development Engineer in Cadence Design System Inc. May 2019-August 2019

- Research and develop a dynamic task-based multithreading model for Maze Routing

Graduate Research Assistant August 2017-Present

- Develop a GPU-accelerated PBA algorithm that overcomes the performance barrier of CPU parallelism
- Develop the threadpool class in the task oriented parallel programming paradigm, Cpp-TaskFlow
- Develop and test a new distributed engine, Dtcraft, for compute-intensive applications in C++17
- Develop built-in machine learning libraries including DNN and DNNRegressor for Dtcraft

Graduate Teaching Assistant, Artificial Intelligence and GPU programming, UIUC August 2017-Dec 2019

- Design machine problems and exams, organize course content, hold office hours, participate in various grading activities, provide technical answers in the class forum

Undergraduate Teaching Assistant, Computer System Engineering (ECE 391), UIUC Jan 2016-Dec 2016

- Hold office hours, participate in various grading activities, present course material

Undergraduate Research Assistant, Simultaneous Escape Problem for PCB Routing May 2016-August 2016

- Develop an automated program to solve simultaneous escape routing problem with SAT solver

PUBLICATIONS:

- G. Guo, T.-W. Huang, C.-X. Lin and Martin D. F. Wong, "An Efficient Critical Path Generation Algorithm Considering Extensive Path Constraints," ACM/IEEE Design Automation Conference (DAC), 2020.
- C.-X. Lin, T.-W. Huang, G. Guo, and Martin D. F. Wong, "A Modern C++ Parallel Task Programming Library," ACM Multimedia Conference (MM), Nice, France, 2019.
- C.-X. Lin, T.-W. Huang, G. Guo, and Martin D. F. Wong, "An Efficient and Composable Parallel Task Programming Library," IEEE High-performance and Extreme Computing Conference (HPEC), Waltham, MA, 2019.
- T.-W. Huang, C.-X. Lin, G. Guo, and Martin D. F. Wong, "Cpp-Taskflow: Fast Task-based Parallel Programming using Modern C++," IEEE International Parallel and Distributed Processing Symposium (IPDPS), Rio de Janeiro, Brazil, 2019.
- T.-W. Huang, C.-X. Lin, G. Guo, and Martin D. F. Wong, "A General-purpose Distributed Programming System using Data-parallel Streams," ACM Multimedia Conference (MM), Seoul, Korea, 2018
- C.-X. Lin, T.-W. Huang, G. Guo, and Martin D. F. Wong, "MtDetector: A High-performance Marine Traffic Detector at Stream Scale," ACM International Conference on Distributed and Event-based Systems (DEBS), Hamilton, New Zealand, 2018