Wan Luan Lee

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Summary

Experienced researcher with 3 years of experience in heterogeneous computing, especially in CUDA programming

Education

Ph.D. Electrical and Computer Engineering, (expected July 2026)
University of Wisconsin-Madison, Madison, WI

- GPU accelerated regular and hypergraph partitioning

Bachelor of Science Chemical Engineering, June 2017 – Aug 2020
Brigham Young University, Provo, UT

- GPA: 3.7/4.0
- Accurately predicted the behavior of molten salt mixtures using molecular simulation

Experience

Research Assistant, Dec 2021 – Present
TW Research Group – Department of Electrical and Computer Engineering, UW – Madison

- Designed and implemented a graph partition algorithm which achieves 9x speed up than the state-of-art CPU parallel graph partitioning tools

Synopsys Internship, May 2022 – July 2022
Mountain View, CA

- Conducted performance analysis on the Synopsis timing tool to identify bottlenecks
- Researched opportunities to apply GPU acceleration to the timing calculation
- Replaced heavy calculations with GPU implantation

Secumax Technology Software Developer, Sep 2020 – May 2021
Taipei, Taiwan

- Constructed a SQL database to store and handle application data efficiently and securely
- Utilized QT to create a cross-platform application which allows users to control remote monitors and perform different functionalities such as zoom in and playback
- Implemented a new user interface to improve the user experience

WeCare Insurance Company Software Internship, Apr 2020 – Aug 2020
Provo, UT

- Lead a team of three and mentor team progress
- Utilize Selenium in Java script to accomplish website automation
- Reorganize SQL database for easier access

Chemical Engineering Teaching Assistant, Jan 2020 – Apr 2020
Provo, UT

- Aided 45 students in Environmental Safety concepts
- Led review sessions for class exams

Chemical Engineering Research Assistant, Sep 2017 – Jan 2020
Provo, UT

- Wrote Python and C++ scripts to generate complex formatted files from data
- Utilized bash commands to run molecular simulations on a supercomputer

- Evaluated molten salt structure for nuclear reactors through molecular dynamics simulation

Publication

Wan Luan Lee, Dian-Lun Lin, Cheng-Hsiang Chiu, Ulf Schlichtmann, and Tsung-Wei Huang. HyperG: Multilevel GPU-Accelerated k-way Hypergraph Partitioner. Asia and South Pacific Design Automation Conference (ASP-DAC) 2025

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. Design Automation Conference (DAC) 2024

Wan Luan Lee, Dian-Lun Lin, Tsung-Wei Huang, Shui Jiang, Tsung-Yi Ho, Yibo Lin, and Bei Yu. G-kway: Multilevel GPU-Accelerated k-way Graph Partitioner. Design Automation Conference (DAC) 2024

Austin David Clark, **Wan Luan Lee**, Andrew Russell Solano, Tyler Bruce Williams, Gabriel Scott Meyer, Granite J Tait, Ben C Battraw, and Stella D Nickerson. 2020. Complexation of Mo in FLiNaK molten salt: insight from ab initio molecular dynamics. The Journal of Physical Chemistry B 2020

Presentations & Posters

Austin David Clark, Stella D Nickerson, **Wan Luan Lee**, Andrew Russell Solano, Tyler Bruce Williams, Gabriel Scott Meyer, Granite J Tait, Ben C Battraw, and Avenly H. Hansen. Speciation of Fuel and Fission Products in Molten Salt Solutions from Ab Initio Molecular Dynamics. Presented at American Institute of Chemical Engineers, 2019 AIChE Annual Meeting. 10- 15 Nov. Hyatt Regency, Orlando, USA

Austin David Clark, Stella D Nickerson, **Wan Luan Lee**, Andrew Russell Solano, Tyler Bruce Williams, Gabriel Scott Meyer, Granite J Tait, Ben C Battraw, and Avenly H. Hansen. Oxidation State of Solutes in Molten Salts from Ab Initio Molecular Dynamics Simulations. Presented at American Institute of Chemical Engineers, 2019 AIChE Annual Meeting. 10-15 Nov. Hyatt Regency, Orlando, USA.

Awards

2023 Design Automation Conference Young Fellowship
Brigham Young University Academic Scholarship
Brigham Young University Chemical Engineering Department Scholarship