

Liuzixuan (Peter) Lin

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EDUCATION

The University of Chicago, Chicago, U.S.A 09/2019 – 09/2025 (expected)

Ph.D. Student in Computer Science

Advisor: Prof. Andrew A. Chien

MS Thesis: How to Effectively Couple Datacenters as Flexible Loads to the Power Grid for Carbon Reduction

Peking University, Beijing, China 09/2015 - 07/2019

Bachelor of Science in Computer Science and Technology

Bachelor of Economics

RESEARCH INTEREST

I'm currently working on approaches to reduce the carbon footprint of data centers, which involve system simulations and analysis of data from power grids/data centers. Generally, I'm interested in resource management and workload characterization in cloud systems.

RESEARCH EXPERIENCE

Zero-carbon Cloud 2019.10–now

Advisor: Andrew A. Chien (The University of Chicago)

- Exploring the opportunities of exploiting surplus renewable generation in power grids with data centers.
- Led the design and development of a system that collects and manages power grid data from 10 grids. Analyzed the data from power grids and data centers for modeling, prediction, and optimization.
- Designed and implemented approaches that coordinate data centers' load shifting techniques and the power grid for effective carbon reduction (12% for data centers).

Inferring Urban Regions' Functions Based on Social Media Text Analysis 2018.2–2019.5

Advisor: Yanchun Sun (Peking University)

- Extracted Beijing's regional topic (e.g. food, travel) and sentiment information from microblogs with NLP methods.
- Developed a query and recommendation system based on geo-semantics (topic and sentiment). (bachelor thesis)

INTERNSHIP EXPERIENCE

Microsoft Research 06/2022–09/2022

Research Intern in Cloud Efficiency Team/Azure Systems Research Group

Mentors: Alok Kumbhare, Ehsan Nasr

Major Responsibility: modeled and implemented data center power management strategy for improving sustainability while maintaining performance.

PUBLICATIONS

Andrew A. Chien, [Liuzixuan Lin](#), Hai Nguyen, Varsha Rao, Tristan Sharma, Rajini Wijayawardana. *Reducing the Carbon Impact of Generative AI Inference (today and in 2035)*. The 2nd Workshop on Sustainable Computer Systems (**HotCarbon'23**).

[Liuzixuan Lin](#) and Andrew A. Chien. *Adapting Datacenter Capacity for Greener Datacenters and Grid*. The 14th ACM International Conference on Future Energy Systems (**e-Energy'23, Best Paper Runner-up**).

Andrew A. Chien, Chaojie Zhang, [Liuzixuan Lin](#), Varsha Rao. *Beyond PUE: Flexible Datacenters Empowering the Cloud to Decarbonize*. The 1st Workshop on Sustainable Computer Systems (**HotCarbon'22**).

[Liuzixuan Lin](#), Victor M. Zavala, and Andrew A. Chien. *Evaluating Coupling Models for Cloud Datacenters and Power Grids*. The 12th ACM International Conference on Future Energy Systems (**e-Energy'21**).

[Liuzixuan Lin](#) and Andrew A. Chien. *Automated Classification of Power Plants by Generation Type*. The 11th ACM International Conference on Future Energy Systems (**e-Energy'20**).

TECHNICAL REPORT

[Liuzixuan Lin](#) and Andrew A. Chien. *Characterizing Stranded Power in the ERCOT in Years 2012-2019: A Preliminary Report*. TR-2020-06, The University of Chicago.

SELECTED AWARDS

Crerar Fellowship, The University of Chicago 09/2019

Excellent Graduate, Peking University 05/2019

Yang Fuqing & Wang Yangyuan Academician Scholarship, Peking University 11/2018

SKILLS

Programming Skills: system simulation, data analytics and visualization, applied machine learning, web app development.

Programming Languages: Python, C/C++, Julia.

Languages: Chinese (native), English (professional), Japanese (beginner)