

# Liuzixuan (Peter) Lin

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## EDUCATION

**The University of Chicago, Chicago, U.S.A**

09/2019 – 07/2024 (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 data analytics on data from power grids/data centers and system simulations.

## 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.
- Analyzed the data from power grids and data centers for downstream tasks such as grid modeling, prediction, and optimization. Leading the development of a system that collects and processes public power grid data.
- Designed and implemented simulations on coupling data centers with load shifting techniques to the power grid.

**Inferring Urban Regions' Functions Based on Social Media Text Analysis (2018.2 - 2019.5)**

Advisor: Yanchun Sun (Peking University)

- Extracted information from microblogs to infer the topics in a region (e.g. food, travel) with NLP methods.
- Integrated sentiment information (e.g. percentage of positive microblogs) to the topics with a LSTM classifier.
- Developed a recommendation/query system based on geo-semantics. (undergraduate thesis)

**Extracting Referenced Datasets from Social Science Papers (2018.7 - 2018.9)**

Advisor: Ian Foster / Kyle Chard (The University of Chicago)

- Summarized the development of named entity recognition (NER) methods.
- Designed and implemented a model based on bidirectional LSTM with CNN and CRF layers, which reads the raw text of social science papers and outputs dataset candidates with the sentences where they appear.

## PUBLICATIONS

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 Design and Implementation (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: C/C++, Python, SQL, Julia, parallel computing (OpenMP, MPI), data visualization (D3.js).

Statistical Software: Stata (beginner).

Languages: Chinese (native), English.