

Chengxuan Li

Anticipated graduation: May 2028

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PhD Candidate, Systems Engineering (Minor: Electrical and Computer Engineering), Cornell University

Web: chengxuan-li.github.io

Technical Skills

Programming: Python, C#/.NET, C++, SQL

ML & scientific computing: PyTorch, scikit-learn, pandas, NumPy; inverse and surrogate modeling, computational optimization, Monte Carlo simulation, system identification, time-series and signal processing

Energy & grid modeling: RC and reduced-order models, load-profile and load-duration analysis; smart-meter AMI/SCADA

Power systems: AC power flow (NR/FDLF), contingency and static security analysis, state estimation, ED/OPE, demand response and flexibility, DER integration

Research & Professional Experience

Environmental Systems Lab, Cornell University, Ithaca, NY

Aug 2024 – Present

PhD Researcher — Advisors: Prof. Timur Dogan, Prof. Oliver Gao, and Prof. Jacob Mays

- Develop ML, optimization, and physics-informed methods for demand inference, load prediction, and model calibration.
- Build scalable simulation and data-analysis workflows for urban energy, electrification, demand response, and load flexibility.

Environmental Systems Lab, in collaboration with Avangrid / NYSEG, Tompkins County, NY

Mar 2025 – Present

PhD Researcher, Grid Innovations

- Build python-DuckDB-.NET processing pipelines for AMI and SCADA data for **80,000+ smart meters across 87 feeders**
- Train sequential clustering and load-duration prediction models on **3.8M load profiles, reducing NRMSE by 50.5%**.
- Quantify demand response and distribution-grid flexibility under heat-pump/electrification growth and DER integration.

EnergyAtlas.io, Ithaca, NY

Jan 2025 – Present

Lead Developer

- Lead development of EnergyAtlas, a C#/.NET city-scale energy digital-twin and simulation platform for building, utility, and urban energy analysis.
- Design simulation-engine architecture, RESTful APIs, and data pipelines integrating geometry/LiDAR, weather, schedules, utility data, and large-scale time-series workflows.

Selected Publications

Chengxuan Li and Timur Dogan. “Calendars of the City: Deterministic Schedule Libraries to Enhance UBEM Load Duration Forecasts.” *IBPSA-USA SimBuild 2026*. [Paper](#) · [DOI: 10.26868/30680611.2026.1321](#)

Chengxuan Li and Timur Dogan. “Deriving high-fidelity residential building archetypes and typical usage patterns from national energy use surveys ...” *Building Simulation 2025, 19th Conference of IBPSA*. [Paper](#) · [DOI: 10.26868/25222708.2025.1336](#)

Timur Dogan, **Chengxuan Li**, Hung Ming Tseng, Amber Jiayu Su, and Patrick Kastner. “A Bottom-Up Urban Building Energy Model for Evaluating Thermal Load Electrification Measures.” *Journal of Building Performance Simulation*. Published online July 2025; volume 19, issue 2 (2026), pages 289–316. [Paper](#) · [DOI: 10.1080/19401493.2025.2536261](#)

Awards & Funding

Nemetschek Innovation Award (€60,000 prize) — *Second place; highest award conferred*

May 2026

New York State Pollution Prevention Institute Competition (\$3,000 prize) — *Winner*

Apr 2026

NYSP2I Research Grant (\$4,000) — *Co-PI with Prof. Timur Dogan*

Nov 2025

Education

Cornell University, Ithaca, NY

Aug 2024 – Present

PhD, Systems Engineering; Minor in Electrical and Computer Engineering

Architectural Association, London, UK

Jun 2024

M.Arch

Architectural Association, London, UK

Jun 2022

BA (Hons)