Yang Yang

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ABOUT

Yang Yang is an urban researcher interested in urban systems modeling and data analytics, particularly within the transportation sector. She is the lead developer of Urbano.io, an agent-based multimodal transportation simulation tool designed to inform urban design and planning across scales. Urbano.io is currently being utilized by urban designers and architects from industry leaders like KPF, as well as researchers and educators from academic institutions globally. This tool has also fostered partnerships with public agencies, including the New York City Department of Transportation (NYCDOT) and the City of Ithaca, facilitating their data-driven municipal decision-making and data platform development.

EDUCATION

2020-24 (Expected)	**PhD in Systems Engineering.** Cornell University. *Engineering.* *Concentration 1: City and Regional Planning* *Concentration 2: Transportation Systems Engineering*	Ithaca, NY, US
2018-19	**Master of Science.** Cornell University. *Architecture and Urbanism*.	Ithaca, NY, US
2014-17	**Master of Architecture.** Tongji University. *Architecture.*	Shanghai, CHN
2010-14	**Bachelor of Engineering.** Tongji University. *Architecture.*	Shanghai, CHN

EXPERIENCE

2024 (Upcoming)	**Cornell University.** *Postdoctoral Fellow* Funded by Cornell Center for Technology Licensing (CTL) to explore commercialization potential of Urbano.io	Ithaca, NY, US
2018-23	**Cornell University.** *Graduate Research Assistant* Researcher at the Environmental Systems Lab working on Urbano.io	Ithaca, NY, US
2019-23	**Cornell University.** *Teaching Assistant* Supported 2 courses in the College of Civil and Environmental Engineering (CEE) and Architecture, Art, and Planning (AAP)	Ithaca, NY, US
2022	**Thomas Jefferson University.** *Adjunct Professor* Instructed 2 courses in the Master of Urban Design Program at College of Architecture & the Built Environment (CABE)	Phila., PA, US
2019	**Cornell University.** *Teaching Associate* Coordinated the summer semester for the M.S.AAD program at AAP	Ithaca, NY, US
2014-16	**Tongji Architectural Design Co.** *Junior Architect* Participated in 1 urban design project and 5 architectural projects	Shanghai, CHN
2013	**Shanghai Construction Group Co.** *Intern Architect.* Assisted with design project reports and construction drawings	Shanghai, CHN

PUBLICATIONS

Journal Articles

2023 **Yang, Y.**, Samaranayake, S., Dogan, T., "A Clustering-Based Approach to Quantifying Socio-Demographic Impacts on Urban Mobility Patterns." *Environment and Planning B: Urban Analytics and City Science*. https://doi.org/10.1177/23998083231159909

2023 **Yang, Y.**, Samaranayake, S., Dogan, T., "Assessing Impacts of the Built Environment on Mobility: A Joint Choice Model of Travel Mode and Duration." *Environment and Planning B: Urban Analytics and City Science*. https://doi.org/10.1177/23998083231154263

2021 **Yang, Y.**, Li, Y., Kral, K., Hupert, N., Dogan, T., "Urban Design Attributes and Resilience: COVID-19 Evidence from New York City." *Buildings and Cities*. https://doi.org/10.5334/bc.130

2020 Dogan, T., **Yang, Y.**, Samaranayake, S., Saraf, N., "Urbano: A Tool to Promote Active Mobility Modeling and Amenity Analysis in Urban Design." *Technology|Architecture + Design*. https://doi.org/10.1080/24751448.2020.1705716

Conference Proceedings (Peer-Reviewed)

Accepted **Yang, Y.**, Dogan, T., "Towards Mobility Simulation-Informed Building Occupancy and Energy Use Profiles for Urban Building Energy Modeling." in *2024 IBPSA-USA SimBuild Conference*, Denver.

2023 Du, P., Mavinkere, N., **Yang, Y.**, "Generative Urban Design: A Workflow Integrating Real-Word Mobility, Zoning, and Multi-Objective Simulation." in *2023 ARCC International Conference*, Dallas.

2022 **Yang, Y.**, Wang, D., Dogan, T., "How the Urban Microclimate and Outdoor Thermal Comfort Can Affect Intra-City Mobility Patterns: Evidence From New York City." in *2022 Annual Modeling and Simulation Conference (ANNSIM)*, San Diego. https://doi.org/10.23919/ANNSIM55834.2022.9859328

2020 **Yang, Y.**, Samaranayake, S., Dogan, T., "An Adaptive Workflow to Generate Street Network and Amenity Allocation for Walkable Neighborhood Design." in *2020 Symposium on Simulation for Architecture and Urban Design (SimAUD)*, online. https://doi.org/10.7298/bmn8-0y37

2019 **Yang, Y.**, Samaranayake, S., Dogan, T., "Using Open Data to Derive Local Amenity Demand Patterns for Walkability Simulations and Amenity Utilization Analysis." in *2019 Joint Conference of eCAADe and SIGraDi*, Porto. https://doi.org/10.5151/proceedings-ecaadesigradi2019_627

Theses

2023 Ph.D. (In Progress) "A Data-Driven Multimodal Trip Simulation Model to Inform Urban Design and Planning."

2019 M.S. "Mobility-Driven Urban Design."

2017 M.Arch. "Dynamics in Residential Policy and Architecture in Shanghai During World War II, 1937-1945."

GRANTS & FUNDS

2024 TBD **Ignite Fellow for New Ventures. $120K** (As Recipient) *Cornell CTL*
"Urbano.io - The only mobility simulation platform for urban design."

2022 SEP - 2023 SEP **Ignite Innovation Acceleration. $50K** (As Project Team) *Cornell CTL*
"Urbano.io - The only mobility simulation platform for urban design."
PI: Timur Dogan, Project Team Members: Yang Yang, Patrick Kastner

2022 JUL – 2023 JUN **Smart & Healthy Cities Seed Grant. $10K** (As Co-PI) *Jefferson Institute for Smart & Healthy Cities*
"Create a Smart Mobility Platform for Analyzing and Visualizing the Effects of Urban Mobility on Population Health in the Center City of Philadelphia."
PI: Peng Du, Co-PIs: Yang Yang, Mitchell A. Kaminski

2020 Aug – 2022 JUL **Small Grants Program. $8K** (As PI) *Cornell Atkinson Center for Sustainability*
"Energy and Mobility Aware Urban Design: A Mobility Simulator Assisting Urban Design Decision Making for Mitigating Energy Consumption and Transportation Emissions."
PI: Yang Yang

TEACHING

2023 SP **TA** for *CEE 5665 Modeling and Optimization for Smart Infrastructure Systems*
Cornell CEE (Instructor: Samitha Samaranayake)

2022 FA **Instructor** for *MUD 600 Modeling Urban Environmental Performance*
Thomas Jefferson CABE

2022 FA **Instructor** for *MUD 603 Performance-Based Urban Design: Integrated Multi-Objective Optimization and Augmented Reality*
Thomas Jefferson CABE

2019 FA **TA** for *ARCH 5611 Environmental Systems I: Site and Sustainability*
Cornell AAP (Instructor: Timur Dogan)

Guest Lectures (GL), Workshops (WK) & Webinars (WB)

2023 WK "Urbano.io V2 Beta Workshop". NYCDOT

2023 GL "Mobility Simulation for Urban Design". School of Architecture, University of Technology Sydney

2023 GL "Modeling and Analyzing Urban Mobility System". Thomas Jefferson CABE

2021 GL "Modeling and Analyzing Urban Mobility System". Thomas Jefferson CABE

2021 WK "Generate and Analyze Urban Mobility Solutions". Thomas Jefferson CABE

2020 WK "Urbano: A Tool to Promote Mobility Aware Urban Design". Symposium on Simulation for Architecture and Urban Design

2019 WB "Urbano: Mobility Modelling and Simulation in Grasshopper3D". Performance Network

2019 WK "Urbano: Mobility Modelling and Simulation in Grasshopper3D". Cornell AAP

AWARDS

2020	M.S.AAD Award for Outstanding Performance in Architecture (Cornel University)
2019	The Mary Miller Lyons Graduate Fellowship in Architecture (Cornell University)
2019	NY Upstate Chapter of the American Planning Association Award for Student Project
2018	The Honorable Mentions. Natian Cup International Design Competition
2017	First Prize. Young Architect Design Competition for Suqian City
2017	Shanghai Outstanding Graduates Award
2016	Third Prize. International Urban Design Competition for Shanghai Railway Station
2015	First Class China National Scholarship for Graduate Student
2014	Academy Award of the Department (Tongji University)
2014	First Class Saint-Gobain Scholarship (Tongji University)
2013	Second Class Jianlang Scholarship (Tongji University)
2013	Second Prize. East Asia Architecture and Urban Planning Competition

SERVICE

Since 2023	Journal Reviewer for Environment and Planning B: Urban Analytics and City Science
Since 2020	Reviewer for Cornell Atkinson Center Small Grants Program

SOFTWARE & PRODUCTS

2023	**Urbano.io (V2).** A multiagent framework for generating individual-level trip data in Rhino & Grasshopper and ArcGIS. (Pre-release)
2023	**Urban Digital Twin APIs.** A data platform showcasing city-level pre-simulated data for energy and transportation systems. https://app.urbano.io
2022	**Earthworms.** A Python scripting environment for Rhino with enhanced interactivity and flexibility. http://www.food4rhino.com/app/earthworms
2019	**Urbano.io (V1).** Mobility modeling and simulation for parametric design in Rhino & Grasshopper. http://www.urbano.io

PATENT

2022 DEC	"Data-Driven Simulation and Analysis Framework for Multi-Modal Urban Mobility Systems." *US Provisional Patent filed at Cornell CTL. Application No. 63433527*

SKILLS

General Purpose Programming: Python, C#

Data / GIS: ArcGIS, QGIS, R, SQL, Matlab, Stata, SPSS

Design / CAD: Rhino & Grasshopper, Adobe Series, AutoCAD, Sketchup, Revit, CityEngine

Research Methods: Systems Modeling and Simulation, Systems Analysis, Systems Design

Language: English, Chinese