

Fabio Miranda

ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE, COLLEGE OF ENGINEERING

UNIVERSITY OF ILLINOIS CHICAGO

851 S. Morgan St, MC 152, Chicago, IL, 60607

✉ fabiom@uic.edu | 🏠 fmiranda.me

Research Overview

I am interested in developing techniques that allow for the interactive visual analysis of large-scale data, combining methods from visualization, data management, AI, and computer graphics. I have worked closely with domain experts from different fields and the outcome of these collaborations included not only research published in leading venues, but also systems that were made available to experts in academia, industry and government agencies. My work has also received extensive coverage from different media outlets, including The New York Times, The Economist, Architectural Digest, among others. Over the past five years, I have secured more than \$1.8 million in funding (my share) from NSF, NIH, and DOT, published more than 20 papers in top-tier computer science conferences and journals, and released several open, accessible software tools with more than 500 GitHub stars across repositories. My work has been recognized with several honors, including the SIGMOD Best Demo Award and an IEEE VIS Best Paper Honorable Mention. I also serve regularly on the IEEE VIS Program Committee and will serve as General Chair of IEEE VIS 2027.

Education

2012 - 2018	Ph.D. in Computer Science New York University (NYU) Advised by Professor Cláudio T. Silva, IEEE Fellow Dissertation: “Data structures for the interactive visual analysis of urban data”	New York, NY, USA
2009 - 2011	M.Sc. in Computer Science Pontifical Catholic University of Rio de Janeiro (PUC-Rio) Advised by Professor Waldemar Celes Thesis: “Volume rendering of unstructured hexahedral meshes”	Rio de Janeiro, RJ, Brazil
2005 - 2009	B.Sc. in Computer Science Federal University of Minas Gerais (UFMG) Advised by Professor Luiz Chaimowicz	Belo Horizonte, MG, Brazil

Professional Experience

Oct. 2020 - present	University of Illinois Chicago Assistant Professor, Department of Computer Science, College of Engineering	Chicago, IL, USA
Fall 2018 - Fall 2020	New York University Postdoctoral researcher	New York, NY, USA
Summer 2016	Argonne National Laboratory Research intern, Mentor: Venkatram Vishwanath	Lemont, IL, USA
Summer 2015	IBM T.J. Watson Research Center Research intern, Mentor: Bruce D’Amora	Yorktown Heights, NY, USA
Summer 2014	AT&T Research Research intern, Mentors: Lauro Lins and James Klosowski	Middletown, NJ, USA
Summer 2013	Sandia National Laboratories Research intern, Mentor: Patricia Crossno	Albuquerque, NM, USA
Fall 2012 - Fall 2018	New York University Research assistant	New York, NY, USA
2009 - 2012	TecGraf / PUC-Rio Research assistant	Rio de Janeiro, Brazil

Awards & Honours

- 2023 IEEE VIS 2023 Best Paper Honorable Mention
For “ProWis: A Visual Approach for Building, Managing, and Analyzing Weather Simulation Ensembles at Runtime”.
- 2023 SIBGRAPI 2023 Best Paper Honorable Mention
For “Visual Analytics for Profiling Land Use Changes”.
- 2022 National Academy of Sciences Kavli Fellow
Cross-disciplinary program recognizing exceptional early-career scientists.
- 2018 SIGMOD Best Demonstration Award
For “Interactive Visual Exploration of Spatio-Temporal Urban Data Sets Using Urbane”.
- 2018 Pearl Brownstein Doctoral Research Award
For doctoral research that shows the greatest promise, awarded by NYU.
- 2010-2012 CAPES and Petrobras Fellowships
Awarded during M.S. studies.
- 2006-2009 FINEP and CNPq Fellowships
Awarded during B.S. studies.

Selected Media Coverage

- November 2022 A scrap metal shredder on the Southwest Side wants to renew its permit. But Pilsen residents are fighting back.
Chicago Tribune [↗](#)
- February 2022 Escuelas y comunidades latinas en Chicago son las más afectadas por la contaminación, según estudio.
Univision Chicago [↗](#)
- November 2017 Urban Pulse maps, analyzes use of urban spaces.
GCN [↗](#)
- September 2017 Urban Pulse Uses Social Media Data to Show Cities in a New Light.
Architectural Digest [↗](#)
- September 2017 New program wants to improve cities with the power of tweets and Flickr uploads.
Curbed [↗](#)
- December 2016 Mapping the Shadows of New York City: Every Building, Every Block.
The New York Times [↗](#)
- October 2016 Listen to the music of the traffic in the city.
The Economist [↗](#)

Publications

Underlined name: advised UIC student

J: journal, C: conference / symposium, A: abstract, W: workshop

Note: IEEE VIS, IEEE VR & EuroVis conference full papers appear in special issues of the IEEE TVCG and CGF journals

Accepted:

- [C24] 2026 Occlusion-Free Conformal Lensing for Spatiotemporal Visualization in 3D Urban Analytics
R. Mota, J. Daniel Silva, F. Miranda, Ehud Sharlin, Usman Alim, Nivan Ferreira
IEEE Transactions on Visualization and Computer Graphics
(IEEE VR 2026, Full paper)

- [J18] 2026 A Neural Radiance Field Approach for View Computation & Exploration in 3D Urban Environments
S. Cobeli, K. Omar, R. Valenca, N. Ferreira, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics
- [C23] 2026 Urbanite: A Dataflow-Based Framework for Human-AI Interactive Alignment in Urban Visual Analytics
G. Moreira, L. Ferreira, Carolina Veiga, Maryam Hosseini, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics
(IEEE VIS 2025, Full paper)
- [C22] 2026 VA-Blueprint: Uncovering Building Blocks for Visual Analytics System Design
L. Ferreira, G. Moreira, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics
(IEEE VIS 2025, Full paper)
- [C21] 2026 StreetWeave: A Declarative Grammar for the Visualization of Multivariate Data for Spatial Networks
S. Srabanti, G. E. Marai, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics
(IEEE VIS 2025, Full paper)
- [J17] 2025 VIGMA: An Open-Access Visual Gait and Motion Analytics Computational Framework
K. Omar, S. Wang, R. Kungumaraju, T. Bhatt, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics
- [J16] 2025 Automatic gait event detection in older adults during perturbed walking
S. Wang, K. Omar, **F. Miranda**, T. Bhatt
Journal of NeuroEngineering and Rehabilitation, 22, 2025, pp. 1-10
- [C20] 2025 Curio: A Dataflow-Based Framework for Collaborative Urban Visual Analytics
G. Moreira, M. Hosseini, C. Veiga, L. Alexandre, N. Colaninno, D. de Oliveira, N. Ferreira, M. Lage, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics, vol. 1, no. 1, Jan 2025, pp. 1224-1234
(IEEE VIS 2024, Full paper)
- [J15] 2025 Deep Umbra: City-Scale Automatic Shadow Detection using Building Height Information
K. Omar, G. Moreira, D. Hodczak, M. Hosseini, M. Lage, **F. Miranda**
IEEE Transactions on Big Data, vol. 11, no. 2, 2025, pp. 388-401
- [C19] 2024 The Future of Urban Accessibility: The Role of AI
J. Froehlich, C. Li, M. Hosseini, **F. Miranda**, A. Sevtsuk, Y. Eisenberg
ACM SIGACCESS Conference on Computers and Accessibility, 2024, pp. 1-6
(ACCESS'24, Short paper)
- [J14] 2024 Assessing the landscape of toolkits, frameworks, and authoring tools for urban visual analytics systems
L. Ferreira, G. Moreira, M. Hosseini, M. Lage, N. Ferreira, **F. Miranda**
Computers & Graphics, vol. 123, 2024, pp. 1-17
- [C18] 2024 A Survey on Visual Analytics for 3D Urban Data
F. Miranda, T. Ortner, G. Moreira, M. Hosseini, F. Biljecki, C. T. Silva, M. Lage, N. Ferreira
Computer Graphics Forum, vol. 43, no. 3, 2024, pp. 1-31
(EuroVis 2024, Full paper)
- [C17] 2024 The Urban Toolkit: A Grammar-based Framework for Urban Visual Analytics
G. Moreira, M. Hosseini, M.N.A. Nipu, M. Lage, N. Ferreira, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics, vol. 30, no. 1, Jan 2024, pp. 1402-1412
(IEEE VIS 2023, Full paper)

- [C16] 2024 ProWis: A Visual Approach for Building, Managing, and Analyzing Weather Simulation Ensembles at Runtime
C.V.F. de Souza, S.M. Bonnet, D. de Oliveira, M. Cataldi, **F. Miranda**, M. Lage
IEEE Transactions on Visualization and Computer Graphics, vol. 30, no. 1, Jan 2024, pp. 738-747
Best Paper Honorable Mention (IEEE VIS 2023, Full paper)
- [C15] 2023 Visual Analytics for Profiling Land Use Changes
C. Santos, M. Hosseini, J. Rulff, **F. Miranda**, L. Wilson, C. Silva, N. Ferreira, M. Large
36th Conference on Graphics Patterns and Images (SIBGRAPI 2023), pp. 1-6
Best Paper Honorable Mention (SIBGRAPI 2023, Full paper)
- [C14] 2023 Visual Analytics Using Heterogeneous Urban Data
S. Bonadia, R. Gama, D. Oliveira, **F. Miranda**, M. Lage
36th Conference on Graphics Patterns and Images (SIBGRAPI 2023), pp. 1-6
(SIBGRAPI 2023, Full paper)
- [J13] 2023 Environmental Justice through Community-Policy Participatory Partnerships
P.A. Boda, F. Fusi, **F. Miranda**, G.M.M. Palmer, J. Flax-Hatch, M. Siciliano, A. Sambanis, L. Johnson, S. Derrible, M. Cailas
Journal of Environmental Protection, vol. 14, no. 8, Aug 2023, pp. 616-636
- [J12] 2023 A Comparison of Spatiotemporal Visualizations for 3D Urban Analytics
R. Mota, M. Horga, N. Ferreira, J. D. Silva, M. Lage, L. Ceferino, U. R. Alim, E. Sharlin, **F. Miranda**
IEEE Transactions on Visualization and Computer Graphics, vol. 29, no. 1, Jan 2023, pp. 1277-1287
(IEEE VIS 2022, Full paper)
- [C13] 2023 Does a quieter city mean less complaints? The sounds of New York City during COVID-19 lockdown
M. Cartwright, M. Fuentes, C. Mydlarz, **F. Miranda**, J. P. Bello
The International Conference on Acoustics, Speech, & Signal Processing (ICASSP)
(ICASSP, Full paper)
- [J11] 2023 Mapping the Walk: A Scalable Computer Vision Approach for Generating Sidewalk Network Datasets
M. Hosseini, A. Sevtsuk, **F. Miranda**, R. M. Cesar Jr, C. T. Silva
Computers, Environment and Urban Systems, vol. 101, April 2023, pp. 1-22
Featured on MIT Press
- [A2] 2022 Interactive Visual Analysis of Urban Data: Applications in the Weather and Climate Domains
F. Miranda
American Geophysical Union Fall Meeting 2022
- [A1] 2022 Mapping Sidewalk Fall Risks Using Big Data And Machine Learning
F. Miranda, M. Hosseini
Innovation in Aging (6)
- [W5] 2022 Crowdsourcing and Sidewalk Data: A Preliminary Study on the Trustworthiness of OpenStreetMap Data in the US
K. Omar, G. Moreira, D. Hodczak, M. Hosseini, **F. Miranda**
ASSETS 2022 UrbanAccess Workshop, pp. 1-7
- [C12] 2022 The Future of Urban Accessibility for People with Disabilities: Data Collection, Analytics, Policy, and Tools
J. Froehlich, Y. Eisenberg, M. Hosseini, **F. Miranda** et al.
ACM SIGACCESS Conference on Computers and Accessibility, 2022, pp. 1-6
(ASSETS '22, Short paper)
- [J10] 2022 A Comparative Study of Methods for Visualization of Probability Distributions of Geographical Data
S. Srabanti, C. V. de Souza, E. J. da Silva, M. Lage, N. Ferreira, **F. Miranda**
Multimodal Technologies and Interaction 6 (7), 53, 2022, pp. 1-20

- [W4] 2022 Towards Global-Scale Crowd+AI Techniques to Map and Assess Sidewalks for People with Disabilities
M. Hosseini, M. Saugstad, **F. Miranda**, A. Sevtsuk, C. T. Silva, J. E. Froehlich
AVA: Accessibility, Vision, and Autonomy Meet, pp. 1-6
(CVPR 2022 Workshop)
- [J9] 2022 Near-fall detection in unexpected slips during over-ground locomotion
S. Wang, **F. Miranda**, Y. Wang, R. Rasheed, T. Bhatt
Sensors, vol. 22, no. 9, pp. 1-13
- [C11] 2022 Urban Rhapsody: Large-scale Visual Exploration of Urban Soundscapes
J. Rulff, **F. Miranda**, M. Hosseini, M. Lage, M. Cartwright, G. Dove, J. P. Bello, C. Silva
Computer Graphics Forum, vol. 41, no. 3, Jun 2022, pp. 209-221
(Eurovis 2022, Full paper)
- [C10] 2022 A Tale of Two Centers: Visual Exploration of Health Disparities in Cancer Care
S. Srabanti, M. Tran, V. Achim, D. Fuller, G. Canahuate, **F. Miranda**, G.E. Marai
IEEE Pacific Visualization Symposium, 2022, pp. 1-10
(PacificVis 2022, Full paper)
- [J8] 2022 CitySurfaces: City-scale Semantic Segmentation of Sidewalks Surfaces
M. Hosseini, **F. Miranda**, J. Lin, C. Silva
Sustainable Cities and Society, vol. 79, Apr 2022, pp. 1-13
- [J7] 2022 Visualizing Simulation Ensembles of Extreme Weather Events
C. V. de Souza, P. Luz, M. Cataldi, **F. Miranda**, M. Lage
Computers & Graphics, vol. 104, May 2022, pp. 162-172
- [J6] 2022 UrbanRama: Navigating Cities in Virtual Reality
S. Chen, **F. Miranda**, N. Ferreira, M. Lage, H. Doraiswamy, C. Brenner, C. Defanti, M. Koutsoubis, L. Wilson, K. Perlin, C. Silva
IEEE Transactions on Visualization and Computer Graphics, vol. 28, no. 12, Dec 2022, pp. 4685-4699
- [C9] 2021 Visualizing Environmental Justice Issues in Urban Areas with a Community Input Approach
J. Flax-Hatch, S. Srabanti, **F. Miranda**, A. Sambanis, M. Cailas
2nd Spatial Data Science Symposium, pp. 1-6
[Featured on Univision Chicago](#)
- [C8] 2021 Sidewalk Measurements from Satellite Images: Preliminary Findings
M. Hosseini, I. B. Araujo, H. Yazdanpanah, E. Tokuda, **F. Miranda**, C. Silva, R. M. Cesar Jr
2nd Spatial Data Science Symposium, pp. 1-6
- [W3] 2021 COVID-19 EnsembleVis: Visual Analysis of County-level Ensemble Forecast Models
S. Srabanti, G. E. Marai, **F. Miranda**
12th Workshop on Visual Analytics in Healthcare, 2021, pp. 1-6
- [W2] 2021 Transportation Scenario Planning with Graph Neural Network
A. A. Peregrino, S. Pradhan, Z. Liu, N. Ferreira, **F. Miranda**
10th International Workshop on Urban Computing, 2021, pp. 1-5
- [C7] 2020 Urban Mosaic: Visual Exploration of Streetscapes Using Large-scale Image Data
F. Miranda, M. Lage, H. Doraiswamy, M. Hosseini, G. Dove, C. T. Silva
2020 CHI Conference on Human Factors in Computing Systems
- [C6] 2020 Learning Geo-Contextual Embeddings for Commuting Flow Prediction
Z. Liu, **F. Miranda**, W. Xiong, J. Yang, Q. Wang, C. T. Silva
Thirty-Fourth AAAI Conference on Artificial Intelligence

- [J5] 2019 Shadow Accrual Maps: Efficient Accumulation of City-Scale Shadows over Time
F. Miranda, H. Doraiswamy, M. Lage, L. Wilson, M. Hsieh, C. T. Silva
IEEE Transactions on Visualization and Computer Graphics, vol. 25, no. 3, pp. 1559-1574, Mar 2019
 Featured on [The New York Times](#)
- [C5] 2018 Time Lattice: A Data Structure for the Interactive Visual Analysis of Large Time Series
F. Miranda, M. Lage, H. Doraiswamy, C. Mydlarz, J. Salamon, Y. Lockerman, J. Freire, C. T. Silva
Computer Graphics Forum, vol. 37, no. 3, pp. 23-35, Jun 2018
- [C4] 2018 Interactive Visual Exploration of Spatio-Temporal Urban Data Sets using Urbane
 H. Doraiswamy, E. Tzirita Zacharitou, **F. Miranda**, M. Lage, A. Ailamaki, C. T. Silva, J. Freire
2018 ACM SIGMOD Intl. Conf. on Management of Data - Demo
[Best Demonstration Award](#)
- [J4] 2018 Spatio-Temporal Urban Data Analysis: A Visual Analytics Perspective
 H. Doraiswamy, J. Freire, M. Lage, **F. Miranda**, C. T. Silva
IEEE Computer Graphics and Application, vol. 38, no. 5, pp. 26-35, Sept/Oct 2018
- [J3] 2018 TopKube: A Rank-Aware Data Cube for Real-Time Exploration of Spatiotemporal Datasets
F. Miranda, L. Lins, J. Klosowski, C. T. Silva
IEEE Transactions on Visualization and Computer Graphics, vol. 24, no. 3, pp. 1394-1407, Mar 2018
- [J2] 2017 Urban Pulse: Capturing the Rhythm of Cities
F. Miranda, H. Doraiswamy, M. Lage, K. Zao, B. Goncalves, L. Wilson, M. Hsieh, C. T. Silva
IEEE Transactions on Visualization and Computer Graphics, vol. 23, no. 1, pp. 791-800, Jan 2017
 Featured on [The Economist](#), invited to [SIGGRAPH 2017 TVCG special session](#)
- [C3] 2017 Data Visualization Tool for Monitoring Transit Operation and Performance
 A. Kurkcu, **F. Miranda**, K. Ozbay, C. T. Silva
5th IEEE Intl. Conf. on Models and Technologies for Intelligent Transportation Systems (2017)
- [W1] 2016 TopKube: A Rank-Aware Data Cube for Real-Time Exploration of Spatiotemporal Datasets
F. Miranda, L. Lins, J. Klosowski, C. T. Silva
Data Systems for Interactive Analysis (DSIA) 2016
- [J1] 2012 Volume Rendering of Unstructured Hexahedral Meshes
F. Miranda, and W. Celes
The Visual Computer Journal, vol. 28, no. 10, pp. 1005-1014, Oct 2012
- [C2] 2011 Accurate Volume Rendering of Unstructured Hexahedral Meshes
F. Miranda, and W. Celes
24th Sibgrapi Conference on Graphics, Patterns and Images (2011)
- [C1] 2011 Illustrative Volume Visualization for Unstructured Meshes Based on Photic Extremum Lines
 A. Rocha, **F. Miranda**, and W. Celes
24th Sibgrapi Conference on Graphics, Patterns and Images (2011)

External Grants (Share of awarded grants: \$1,860,855)

Awarded:

Fall 2024 - Fall 2029

Collaborative Research: Frameworks: Cyberinfrastructure to Catalyze and Sustain the Urban Computing Community

NSF (Cyberinfrastructure for Sustained Scientific Innovation)

Role: UIC PI

UIC's share: \$1,750,000. Miranda's share: \$1,225,000 (70% of UIC's share)

Fall 2024 - Fall 2029	Aging and task-specific training to reduce falls Role: Co-I UIC's share: \$3,879,744. Miranda's share: \$232,785 (6% of UIC's share)	NIH
Fall 2023 - Fall 2026	Research Infrastructure: MRI: Track 2 Acquisition of Data Observation and Computation Collaboratory (DOCC) Role: Co-PI UIC's share: \$1,548,545. Miranda's share: \$154,854 (10% of UIC's share)	NSF (Major Research Instrumentation Program)
Fall 2023 - Fall 2028	Clean Energy and Equitable Transportation Solutions (CLEETS) Role: SP UIC's share: \$1,181,443. Miranda's share: \$177,216 (15% of UIC's share)	NSF (US-UK Global Centers)
Fall 2023 - Fall 2025	Impact Measurement for At-Grade Crossings Analysis and Prioritization Role: PI Total: \$205,000. UIC's share: \$41,000. Miranda's share: \$41,000 (20% of total share).	IDOT
Fall 2022 - Fall 2023	Data readiness for 'Perturbation training for enhancing stability and limb support control for fall-risk reduction among stroke survivors' Role: Co-I UIC's share: \$308,918. Miranda's share: \$30,000 (10% of UIC's share).	NIH

Internal Grants

Fall 2025 - Fall 2027	SPILAB: Creating Pathways for Community-Centered Mobility in Illinois and São Paulo: Advancing Accessibility, Public Health, and Climate Resilience Role: PI UIC's share: \$11,000	Brasillinois Collaborative Grant
Fall 2025 - Fall 2026	Cracking the Big Data Challenge in Transportation Role: Co-PI UIC's share: \$11,000	University of Toronto – University of Illinois
Fall 2022 - Fall 2024	PRESUR: Planning a Resilient and Equitable State Using Real-time Data Role: Co-PI UIC's share: \$125,000. Miranda's share: \$32,000 (25%)	DPI

Teaching

400-level courses: Graduate and undergraduate courses
500-level courses: Graduate-only courses

Course evaluation scores are on a 0-5 scale; *n* denotes the number of student responses

Fall 2025	CS424: Visualization & Visual Analytics (Students: 61) Graduate session (n=20): Overall teaching effectiveness: 4.5; Overall quality of the course: 4.6 Undergraduate session (n=7): Overall teaching effectiveness: 3.71; Overall quality of the course: 4.17 Course page ↗	UIC
Spring 2025	CS424: Visualization & Visual Analytics (Students: 60) Graduate session (n=18): Overall teaching effectiveness: 4.67; Overall quality of the course: 4.61 Undergraduate session (n=11): Overall teaching effectiveness: 4.4; Overall quality of the course: 4.5 Course page ↗	UIC

Fall 2024	CS524: Big Data Visualization & Visual Analytics (Students: 30) Graduate session (n=27): Overall teaching effectiveness: 4.48; Overall quality of the course: 4.33 Course page ↗	UIC
Spring 2024	CS425: Computer Graphics I (Students: 39) Graduate session (n=6): Overall teaching effectiveness: 4.83; Overall quality of the course: 4.83 Undergraduate session (n=26): Overall teaching effectiveness: 3.69; Overall quality of the course: 3.77 Course page ↗	UIC
Fall 2023	CS424: Visualization & Visual Analytics (Students: 90) Graduate session (n=39): Overall teaching effectiveness: 4.7; Overall quality of the course: 4.73 Undergraduate session (n=40): Overall teaching effectiveness: 4.28; Overall quality of the course: 4.18 Course page ↗	UIC
Spring 2023	CS524: Big Data Visualization & Visual Analytics (Students: 38) Graduate session (n=35): Overall teaching effectiveness: 4.63; Overall quality of the course: 4.54 Course page ↗	UIC
Fall 2022	CS424: Visualization & Visual Analytics (Students: 50) Graduate session (n=19): Overall teaching effectiveness: 4.63; Overall quality of the course: 4.58 Undergraduate session (n=22): Overall teaching effectiveness: 4.36; Overall quality of the course: 4.45 Course page ↗	UIC
Spring 2022	CS425: Computer Graphics I (Students: 49) Graduate session (n=6). Overall teaching effectiveness: 4.67; Overall quality of the course: 4.67 Undergraduate session (n=31). Overall teaching effectiveness: 3.97; Overall quality of the course: 3.9 Course page ↗	UIC
Fall 2021	CS594: Big Data Visualization & Analytics (Students: 29) Graduate session (n=25). Overall teaching effectiveness: 4.4; Overall quality of the course: 4.36 Course page ↗	UIC
Spring 2021	CS425: Computer Graphics I (Students: 41) Graduate and undergraduate sessions (n=33): Overall teaching effectiveness: 4.03; Overall quality of the course: 4.03 Course page ↗	UIC

Advising & Mentoring (Completed)

M.Sc. thesis

Multi-Modal Knowledge Graph Representation of Design Studies for Visual Analytics System Authoring, 2026

Vamsi Dath Meka

M.Sc. thesis

Using computer vision for the automatic classification of building facades, 2023

Davide Bartoletti

M.Sc. project

Introducing and Enhancing User Provenance in the Curio Framework, 2025

Venkata Pidaparathi

M.Sc. project

Enhancing Collaborative Urban Analytics in Curio, 2025

Durga Venkata Kashyap Munukutla

M.Sc. project

Data management optimizations for the Urban Toolkit, 2024

Sajal Chandra

M.Sc. project

Transportation Scenario Planning with Graph Neural Networks, 2022

Soham Pradhan

B.Sc. projects

Shaun Shannon (2025), Jayanth Podapati (2025), Shanmukh Upadhyayula (2025), Ilyan Pang (2025), James Mahia (2025), Daniel Hodczak (2022-2024)

Advising & Mentoring (Ongoing)

Ph.D. candidates (post proposal defense)

Gustavo Moreira (2022-), Kazi Omar (2021-), Sanjana Srabanti (2020-)

Ph.D. students

Keira Wang (2025-), Leonardo Ferreira (2024-), Stefan Cobeli (2021-)

B.Sc. students

Logan Loch (2026-), Henry Nguyen (2025-)

PhD & MSc Committees

Ph.D. committees

Carla Floricel (UIC, 2025) • Mobashir Sadat (UIC, 2024) • Emily Muller (ICL, 2023) • Andrew Wentzel (UIC, 2023) • Carolina Veiga (UFF, 2022) • Shaoyu Chen (NYU, 2022)

M.Sc. thesis committees

Raj Paresh Mehta (2025)

M.Sc. project committees

Parikshit Solunke (2021) • Pavana Doddi (2021)

WCP committees

Stefan Cobeli (2023) • Kazi Omar (2023) • Carla Floricel (2021) • Md Nafiul Alam Nipu (2021) • Andrew Wentzel (2021) • Muhammad Abdul Wahhab (2021)

Academic Services

Conference general chair

• IEEE VIS (2027)

Program chair

• SIBGRAPI (2022)

Conference and workshop organization

- The 4th Workshop on The Future of Urban Accessibility at ASSETS'24 • 1st Workshop on The Future of Urban Accessibility at ASSETS'22
- VIS 2021, Local co-chair (2021)
- The Future of Global-Scale Spatial Data Collection and Analyses on Urban (in)Accessibility for People with Disabilities Workshop, Co-chair (2021)

Program committees

• IEEE VIS Full papers (2022, 2023, 2024, 2026) • IEEE VIS Short papers (2019, 2020, 2021, 2023, 2025)
• EuroVis (2022, 2023, 2024) • Visualization and Data Analysis Conference (2022) • SIBGRAPI (2019, 2020, 2021, 2023)

Editor

• Computers & Graphics (SIBGRAPI 2022 Special Issue)

Grant review panels

- NSF reviewer (2022, 2022, 2024)
- Center for Transportation, Equity, Decisions and Dollars reviewer (2022) • Discovery Partners Institute reviewer (2021)

Journal reviewer

- IEEE Trans. on Visualization and Computer Graphics (2020, 2021, 2022, 2023, 2024, 2025) • IEEE Trans. on Big Data (2020)
- IEEE Trans. on Intelligent Transportation Systems (2021) • The Visual Computer Journal (2019, 2020, 2021, 2022) • Transportation Research Record Journal (2020) • International Journal of Geo-Information (2021)

Conference reviewer

- IEEE VIS (2020, 2021, 2022) • EuroVis (2019, 2020, 2021, 2022) • Sibgrapi (2019, 2020, 2021, 2022)
- VLDB (2021) • WWW (2021) • International Conference on Pattern Recognition (2020, 2021, 2022)

University Services

Department committees

- Graduate Committee (2023-2024, 2024-2025, 2025-2026)
- Faculty Search Committee (2021-2022, 2022-2023)
- Graduate Admission Committee (2020-2021)

Reviewer

- Provost's Graduate Research Award reviewer (2020)

Selected Invited Talks and Presentations

October 2025	Reinvigorating Environmental Science in Chicago Beyond100K Summit	Chicago, IL, USA
March 2025	OSCUR: A Platform for Understanding Urban Data - Demonstration and Introduction NYC School of Data 2025	New York City, NY, USA
March 2024	Interactive Urban Visual Analysis at Scale: From Data to Actionable Insights US Census Bureau	Online
March 2023	Interactive Urban Visual Analysis at Scale: From Data to Actionable Insights Visiting lecturer Fluminense Federal University	Niteroi, RJ, Brazil
December 2022	Interactive Visual Analysis of Urban Data: Applications in the Weather and Climate Domains AGU Fall Meeting 2022 American Geophysical Union	Chicago, IL, USA
November 2022	Mapping Sidewalk Fall Risks Using Big Data and Machine Learning GSA 2022 Annual Scientific Meeting Gerontological Society of America	Indianapolis, IN, USA
October 2022	Interactive Visual Analysis at Scale: From Data to Actionable Insights Keynote speaker SIBGRAPI 2022	Natal, RN, Brazil

July 2022	Interactive Visual Analysis of Urban Data: Immersive Analytics Opportunities Kavli Frontiers of Science Symposium National Academy of Science	Davis, CA, USA
April 2022	Interactive Visual Analysis of Urban Data: Immersive Analytics Opportunities The Next Evolution: XR & AEC VRAR CHICAGO	Online
January 2022	Interactive Visual Analysis of Urban Data: Beyond Flatland Urban Initiative Program New York University	Online
April 2021	Interactive Visual Analysis of Urban Data: Beyond Flatland Department of Energy Computer Graphics Forum 2021 Department of Energy	Online
April 2021	Interactive Visual Analysis of Urban Data: A Computational Perspective on Cities Federal University of Rio Grande do Sul	Porto Alegre, RS, Brazil
March 2021	Interactive Visual Analysis of Urban Data: A Computational Perspective on Cities Fluminense Federal University	Niteroi, RJ, Brazil
December 2018	Exploration of Street-Level Images at Scale Pedestrian Movement Technology Showcase at Metro North	New York City, NY, USA
November 2018	Shadow Accrual Maps: Efficient Accumulation of City-Scale Shadows over Time IEEE Visualization Conference (VIS)	Berlin, Germany
June 2018	Time Lattice: A Data Structure for the Interactive Visual Analysis of Large Time Series EG/VGTC Conference on Visualization (EuroVis)	Brno, Czech Republic
October 2017	TopKube: A Rank-Aware Data Cube for Real-Time Exploration of Spatiotemporal Datasets IEEE Visualization Conference (VIS)	Phoenix, AZ, USA
September 2016	Visualizing and Exploring Urban Data Data Visualization Summit	Boston, MA, USA
October 2016	TopKube: A Rank-Aware Data Cube for Real-Time Exploration of Spatiotemporal Datasets Data Systems for Interactive Analysis Workshop (DSIA)	Chicago, IL, USA

Professional Memberships

Association for Computing Machinery (ACM)