Rohit Priyadarshi Sanatani

PhD Scholar (Design Computation) - MIT
Founder – PLACEIFY - https://placeify.city/

SM (Computer Science), SM (Design Computation)
Massachusetts Institute of Technology (MIT)

Basic Information:

Date of Birth: 29/06/1992
Email: sanatani@mit.edu | rohitsanatani@yahoo.co.in
Website: https://architecture.mit.edu/people/rohit-sanatani
http://rohitsanatani.com/

Professional Interests:

- Computational analysis of architectural and urban perception
- Data-driven design-assistance and decision-support
- Computer vision and NLP for urban big-data analytics
- Data democratisation – frameworks for decentralised data collection

Educational Qualifications:

Sep 2023 – (pursuing) **PhD - Design Computation**
Minor: Artificial Intelligence and Knowledge Representation
Massachusetts Institute of Technology (MIT)
Leventhal Center for Advanced Urbanism (LCAU) Fellowship
GPA 5.0/5.0

Sep 2021 – June 2023 **Master of Science - Design Computation**
Master of Science - Electrical Engineering and Computer Science
Massachusetts Institute of Technology (MIT)
Merit Scholarship 2022-23 | Graduate Fellowship 2021-23
GPA 5.0/5.0

Jul 2015 – Jun 2017 **Master of Architecture (M.Arch) - Urban Design**
CEPT University, Ahmedabad.

Jul 2010 – May 2015 **Bachelor of Architecture (B.Arch)**
Indian Institute of Engineering Science and Technology (IIEST), Shibpur.
All India Rank 2 – Graduate Aptitude Test in Engineering (GATE) 2015

Professional Experience (full-time affiliations in **bold**):

June 2023 – Present Founder and Lead Developer - PLACEIFY
https://placeify.city/

A tool for "evaluation-by-analogy" in urban analytics and design, currently in beta phase.

PLACEIFY helps designers communicate and evaluate complex urban experiential qualities by finding real places around the world that closely resemble designed scenarios.

Jun 2023 – Aug 2023	**Research Affiliate** Senseable Dubai Lab (A collaboration between MIT Senseable City Lab and Dubai Future Foundation) Modelling of urban pedestrian route choices with respect to shading and air temperature, for enhancing walkability in Dubai.
Oct 2022 – June 2023	Research Assistant Senseable City Lab, Massachusetts Institute of Technology Deployment of computer vision models for large-scale visual analytics involving indoor and outdoor urban spaces. Machine learning for the predictive modelling of urban socio-economic attributes.
May 2022 – Jul 2022	**Summer Researcher - Data Science and Machine Learning** Spatio Metrics Inc., Cambridge, MA Worked on exploratory data analysis and the deployment of supervised machine learning models for the predictive simulation of health outcomes in hospital wards. Project funded by the National Science Foundation (NSF).
Feb 2022 – May 2022	Research Assistant Virtual Experience Design Lab, MIT
Sep 2021 – May 2022	Teaching Assistant Department of Architecture, MIT Courses assisted: 4.022 - Introduction to Building Techniques and Technologies, 4.567 – Introduction to Building Information Modelling (BIM)
Jul 2019 – Jul 2021	**Assistant Professor of Urban Design** School of Planning and Architecture (SPA), New Delhi, India Courses conducted: Decoding the Experience of an Indian City, Cities for Citizens, Research Methods, Urban History and Development Theory, Urban Form Lab, Digital Skills in Urban Design, Urban Design Studio.
Aug 2017 - Jul 2019	**Project Lead** Studio Lotus, New Delhi Design and development of a 500-acre residential township near Jaipur Master plan proposal for the Puri Temple complex precinct. Design of a 10-acre urban leisure hub in Coimbatore
Jul 2016 – May 2017	Teaching Assistant CEPT University, Ahmedabad. Courses assisted: Introduction to Architectural Thinking, Introduction to Culture and Society.
Jan 2016 – Jul 2016	Research Assistant CEPT University, Ahmedabad.
Jun 2014 – Nov 2014	**Intern Architect |** Dulal Mukherjee and Associates, Kolkata

Academic and Professional Activities:

2024 **Peer reviewer |** Computational Urban Science

2024 **Peer reviewer |** Association of Computer Aided Architectural Design Research in Asia (CAADRIA)

2023 **Guest Reviewer |** Boston Architectural College
Course: Bachelor of Architecture (B.Arch) Design Studios

2021 **Guest Reviewer |** University of Queensland
Course: Urban Design: Micro Urbanism (UDAD7003)

2021 **Workshop Instructor |** Digital Futures 2021: Inclusive Futures
Workshop title: 'Urban Safety: Crowd-sourced Data-driven Approaches using Machine Vision'.

2021 **Consultant |** Involved in the preparation of Form-Based Code guidelines for New Town, Kolkata

2020 **Peer reviewer |** International Journal of Architectural Computing

2017 – 2019 **Heritage Walk Leader |** India Heritage Walks
Conducted walks focused around the urban evolution of medieval Delhi.

Invited Talks and Lectures:

2024 **Wentworth Institute of Technology (WIT), Boston**
Lecture: Design and Historical Thinking

2023 **Boston Architectural College (BAC)**
Lecture: Architecture and Historical Thinking

2023 **ARCADIS/IBI Group India**
Talk: Towards New Paradigms of Design Evaluation

2023 **Indian Institute of Engineering, Science and Technology (IIEST)**
Talk: New Paradigms of Design Evaluation

2022 **Indian Institute of Engineering, Science and Technology (IIEST)**
Lecture: Urban Evolution of Delhi (800s – 1900s)

2021 **Academy of Architecture (AoA), Mumbai**
Talk: Interdisciplinary Approaches in Design Research and Practice

2017 **Indian Institute of Engineering, Science and Technology (IIEST)**
Introduction to the Theory(ies) of Architecture

List of Publications:

2024 Huang, Y., **Sanatani, R.P.,** Liu, C., Kang, Y., Zhang, F., Liu, Y., Duarte, F. and Ratti, C., 2024. No "true" greenery: Deciphering the bias of satellite and street view imagery in urban greenery measurement. *Building and Environment*, p.112395. https://doi.org/10.1016/j.buildenv.2024.112395

2024 Chatterjee S and **Sanatani R** (2024) Micro-Spatial Elements and Their Impact on Socio-Spatial Behaviour: A Study in Virtual Reality. In: *CAADRIA 2024: Accelerated Design*, Singapore, 2024, pp. 449–458.
https://doi.org/10.52842/conf.caadria.2024.3.449

2023 **Sanatani, R. P**., Nagakura, T., 2023. *The Many Faces of the Metropolis: Unsupervised clustering of urban environments in Mumbai based on visual features as captured in city-wide street-view imagery.*, Proceedings of the 28th International Conference of the Association for Computer-Aided Architectural Design Research in Asia. https://doi.org/10.52842/conf.caadria.2023.1.555

2022 **Sanatani, R. P.**, Nagakura, T. and Tsai, D., 2022. *The Tourist's Image of the City: A comparative analysis of the visual features and textual themes of interest across three global metropolises.*, The Ibero-American Society of Digital Graphics (SIGraDi), 2022. https://papers.cumincad.org/cgi-bin/works/Show?sigradi2022_253

2022 **Sanatani, R. P**., 2022. *Democratizing Urban Data: A mobile-app based framework for rapid cataloging of geolocated street-level imagery.*, Proceedings of the 40th Education and research in Computer Aided Architectural Design in Europe (eCAADe) Conference, 2022. https://doi.org/10.52842/conf.ecaade.2022.1.511

2022 **Sanatani, R.P**., 2022. *Where would you stand on the subway? A Bayesian framework for modeling commuter positioning choices in simulated subway coaches.* Proceedings of the 44th Annual Conference of the Cognitive Science Society (CogSci 2022). https://escholarship.org/uc/item/6g1631nw

2021 **Sanatani, R.P**., Chatterjee, S.S. and Manna, I., 2021. *Subject-specific Predictive Modelling for Urban Affect Analysis.,* Proceedings of the 26th International Conference of the Association for Computer-Aided Architectural Design Research in Asia. https://doi.org/10.52842/conf.caadria.2021.2.387

2020 **Sanatani, R. P**., 2020. *User-specific predictive affective modeling for enclosure analysis and design assistance.*, Proceedings of the 54th International Conference of the Architectural Science Association (ANZAScA) 2020. https://archscience.org/paper/user-specific-predictive-affective-modeling-for-enclosure-analysis-and-design-assistance/

2020 **Sanatani, R. P**., 2020. *A machine-learning driven design assistance framework for the affective analysis of spatial enclosures.*, Proceedings of the 25th International Conference of the Association for Computer-Aided Architectural Design Research in Asia. p.741. https://doi.org/10.52842/conf.caadria.2020.1.741

2019 **Sanatani, R.P.** 2019. *An Empirical Inquiry into the Perceptual Qualities of Spatial Enclosures in Head Mounted Display Driven VR Systems - Quantifying the 'Intangibles' of Space.* Architecture in the Age of the 4th Industrial Revolution - Proceedings of the 37th eCAADe and 23rd SIGraDi Conference - Volume 3, University of Porto, Porto, Portugal, 11-13 September 2019, pp. 125-132. https://doi.org/10.52842/conf.ecaade.2019.3.125

2019 **Sanatani, R.P. 2019**. *An Empirical Inquiry into the Affective Qualities of Virtual Spatial Enclosures in Head Mounted Display driven VR Systems.* Virtually Real: Immersing into the Unbuilt. Proceedings of the 7th eCAADe Regional International Symposium. Aalborg University Press, Aalborg.

Grants and Awards:

2024 **SIDARA Urban Research Seed Fund**
Project: Beyond Prompts: Analogy-enhanced generative AI for Urban Design.
Team: Randall Davis, Takehiko Nagakura, **Rohit Sanatani**
Value $200,000. Duration Jan 2025-Dec 2026
https://lcau.mit.edu/research/beyond-prompts-analogy-enhanced-generative-ai-tools-urban-design