

PIYUSH KHAIRNAR

Illinois Institute of Technology
College of Architecture
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RESEARCH INTERESTS

Modeling, analysis, and design of building systems using parametric simulation tools. Quantifying building performance and environmental impact. Topics of interest include advanced composite materials, structural simulations, building energy simulations, digital fabrication processes, and construction methods.

EDUCATION

Illinois Institute of Technology	Chicago, IL
Ph.D. in Architecture	August 2022
Technologies of the built environment	
Illinois Institute of Technology	Chicago, IL
Master of Architecture (Advanced Standing)	May 2017
Visvesvaraya National Institute of Technology	Nagpur, India
Bachelor of Architecture	August 2015

TEACHING EXPERIENCE

Instructor (Remote) , Texas Tech University	Fall 2022
Architectural Technology IV: Atmosphere	
Adjunct Professor , Illinois Institute of Technology	Fall 2022
Design Communications I	
Instructor , Illinois Institute of Technology	Summer 2022
IntroARCH: Graduate Student Preparatory Workshop	
Adjunct Professor , Illinois Institute of Technology	Spring 2022
Architecture Studio II - Unit	
Graduate Teaching Assistant , Illinois Institute of Technology	2018-2021
ARCH 230: Systems - Structural Analysis	
ARCH 482: Material - Fibrous	
ARCH 483: Material - Transparent	
ARCH 485: Structures I	
ARCH 488: Structural Systems for Tall Buildings	
Graduate Teaching Assistant , Illinois Institute of Technology	2016-2017
ARCH 497: Shape of Stress	
ARCH 486: Structures II	
ARCH 485: Structures I	

ACADEMIC HONORS

College of Architecture: Best Defended Doctoral Dissertation 2021-2022

SERVICE

International Graduate Student Symposium, Illinois Institute of Technology, Chicago
 Co-Organizer, Theme: Regenerative Cities Fall 2022
 Steering Committee, Theme: Human Behavior, Performance & Built Envir. Fall 2020
 Volunteer, Theme: Buildings, Cities & Performance Fall 2019

Invited Critic, Illinois Institute of Technology, Chicago, IL
 Design Communications I - Prof. McPhillips & Prof. Khan Spring 2022
 Design Studio I - Prof. Khan Fall 2021
 Design Studio I - Prof. Bay Fall 2020

Guest Critic, Academy of Art University, San Francisco, CA
 Digital Fabrication - Prof. Campbell Fall 2022

PROFESSIONAL EXPERIENCE

Design Intern, Endrestudio Jun 2020 - Aug 2021
 Emeryville, CA

- Performed structural analysis and produced reports for project approval.
- Developed construction documents for project realization.
- Implemented visualization techniques for presentation drawings.
- Delivered parametric simulation models for a variety of projects.
- Trained new hires in office workflow and drawing standards.

Project Designer, RossTarrant Architects Sep 2017 - Jun 2018
 Lexington, KY

- Provided design support in the development of educational projects.
- Coordinated with external consultants for successful project delivery.
- Initiated development of BIM-based parametric building models.
- Performed design checks for building code compliance.
- Managed the exchange of project information with external consultants.
- Assisted in quality control of design drawings before project bidding.

Structural Design Intern, EECplus Inc. Dec 2016 - May 2017
 Milwaukee, WI

- Performed various design tasks for project development.
- Assisted in drawing generation for a large-scale residential project.
- Collaborated with project architects and engineering consultants.
- Maintained record of project meetings for internal office use.

Architectural Intern, JMA Jun 2014 - Dec 2014
 New Delhi, India

- Supported senior office staff in design drawings under supervision.
- Developed interior space layouts for residential as well as retail projects.
- Created physical models for project representation.

RESEARCH AND CREATIVE WRITING

1. Efficiency of Carbon Fiber Composite Structural Systems for Tall Buildings: A Parametric Simulation-Based Framework for Finite Element Analysis, (Doctoral Dissertation), August 2022.
2. Steady State Analysis of Thermal Performance for a 4 Layer ETFE Envelope System, December 2018
3. Images of the Other Realm: A Study in Architectural Representations, May 2017
4. Reinterpreting the Vernacular: reviewing the Architecture of Pearl Academy of Fashion in Jaipur, December 2016
5. Form, Function, and Structure: The Impact of Second Chicago School, December 2015
6. User-Space Relation: A Study on Sick Building Syndrome, April 2015

PRESENTATIONS

1. A Balancing Act: Carbon Fiber Composite Structural Systems for Tall Buildings, Illinois Institute of Technology, May 2022.
2. Application of Carbon Fiber Composites in Tall Building Structures, Architecture Research Forum, Illinois Institute of Technology, April 2020.
3. Carbon Fiber Composites as Building Material: A review of material properties, Architecture Research Forum, Illinois Institute of Technology, March 2019.

SKILLS

Architecture: AutoCad, Revit, Rhinoceros, SketchUp

Simulation: Grasshopper, Karamba3D, Etabs, SAP, Energy+, Ladybug Tools

Administrative: Microsoft Word, Excel, PowerPoint

Graphics: Adobe Photoshop, Adobe InDesign, Adobe Illustrator