ABHINAV BHARDWAJ

Architect I Urban Designer I Computational Designer

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About:

Intrigued by the potential of technology to redefine societal frameworks; Abhinav is an architect and urban designer specializing in computational design, artificial intelligence and machine learning.

With a background spanning six years and international exposure across eight countries, he holds an MSc in Urban Design and City Planning from RWTH Aachen University, Germany, and currently works as a computational designer focused on AI and automation in AEC at Coera in Oslo, Norway. His focus is on integrating contemporary technology with architectural and urban planning practices.

Education:

- MSc. Transforming City Regions (Urban Design and City Planning), RWTH Aachen University, Germany (2022-2024)
- Bachelors of Architecture, Galgotias School of Architecture, Greater Noida (2016-2021)

Professional experience:

Computational Designer- AI and Automation in AEC
(March 2026 – Present)

Coera – Oslo, Norway.

- AI, automation and computational design initiatives across architectural and urban development projects, developing custom computational workflows, generative design pipelines, and internal tooling that integrate AI into design, documentation, and delivery processes for residential and urban schemes in the Oslo region.

Computational Designer – Scientific Researcher
(May 2025 – Feb 2026)

Fraunhofer Gesellschaft – IBP, Stuttgart, Germany.

- Developing interactive, web-based systems for parametric and generative design within data-centric platforms for architecture and urban planning. The work emphasizes automation, real-time simulation, and context-aware design logic to create intelligent computational workflows.

Computational Designer
(April 2025 – August 2025)

Spacio, Oslo, Norway / Gothenburg, Sweden

- Building web-based parametric and generative design workflows within a data-driven platform for architecture and urban planning. Focused on developing interactive computational systems that integrate automation, real-time simulations, and contextual design intelligence.

Computational Urban Designer (Contract)
(December 2024 – February 2025)

AtkinsRealis, Dubai, UAE

- Worked on integrating computational design workflows, automation, and parametricism into Urban design projects based in the Middle East.

Computational Design Intern
(September 2023 – June 2024)

Link Arkitektur, Copenhagen, Denmark/ Sweden

- Supported the development of sustainability-focused design tools, including the Speckle LCA tool for Nordic regulatory compliance integration of environmental algorithms into the Link IO Building Sketcher and independently created the Urban Sketcher in Grasshopper to enhance neighborhood-scale planning by 40% through Parametric Urbanism.

Student research assistant
(December 2023 – June 24)

Werkzeugmaschinenlabor, WZL, Aachen, Germany

- Digital factory planning, automation, and B.I.M initiatives, driving efficiency and innovation in manufacturing processes, enhancing manufacturing processes; achieved overall increment in productivity and cost savings through streamlined operations.
- Collaborated with cross-functional teams including BMW and Tesla to implement cutting-edge technologies, optimize production workflows, and maximize 15 to 20 % production output in the built environment.

Parametric Designer/Architect (freelance)
(December 2023 – February 2024)

NBAX Architects, Frankfurt, Germany / Shanghai, China

- Transformed architectural design and planning processes through advanced computational methodologies. Collaborated with international teams to deliver 5 major architectural projects in Germany, China, Dubai, and Canada, consistently achieving above-target results.

Working Student
(February 2023 – September 2023)

Greeen Architects, Düsseldorf, Germany

- Conceptualized and executed 7 governmental, residential, institutional, and commercial projects, ensuring alignmentwith client objectives and industry best practices.

Computational Architecture Intern
(August 2022 – October 2022)

Quino Bono Arcquitectos, Valencia, Spain

- Implementation of computational design methodologies into architectural projects, optimizing environmental, structural, and aesthetic parameters. Leveraged advanced software suites including Rhinoceros and Grasshopper, to enhance design feasibility and success. Resulted in a 20% increase in project efficiency and accuracy.

Architect
(July 2021 – January 2022)

Basics Architects, New Delhi, India

- Contributed creative insights and technical expertise to a wide range of architectural projects, from concept development to construction documentation to optimize the workflow by 10-15%. Collaborated closely with clients and stakeholders to translate design visions into reality, meeting rigorous quality standards and deadlines.

Architecture Intern
(January 2020 – December 2020)

Navin Kumar Architects, Meerut / Ahmedabad, India
Fether - The Design Studio

- Collaborated in the design and development of 6 residential and commercial projects, gaining hands-on experience in architectural drafting, modeling, and visualization.
- Supported in client meetings, 3 site visits and dimensions, and project coordination, demonstrating a strong commitment to excellence and continuous learning.

Skills:

Tools:

- Grasshopper
- Rhinoceros
- Autodesk Revit
- Unreal Engine
- AutoCAD
- Photoshop
- InDesign
- Illustrator
- SketchUp
- Z-Brush
- Lumion
- Q-GIS
- Enscape
- V-Ray
- Maya
- ArchiCAD

Plugins:

- Ladybug
- Honeybee
- Kangaroo
- Decoding Spaces
- Urbano
- Lunchbox
- Elk
- Karamba
- Elefront
- Dragonfly
- Wallacie
- Pufferfish

AI Skills:
Custom model training, Machine learning frameworks, AI AEC tool development, Gen-AI and Gen Design integration
AI automation frameworks integration into custom algorithms, Comfy-UI, Claude development, Claude Skills, MCP, Git, Claude, Claude extensions development

Technical Skills:
Parametric and computational Design, Sustainable Development, Architecture and urban design, Digital Fabrication
Custom computational frameworks development, automation algorithms in grasshopper and web, AI integration and custom AI frameworks development

Soft Skills:
Curious, Cross-functional Collaboration, interdisciplinary coordination, tactical foresight, innovative resolution

Achievements:

- Built 155k+ audience across Instagram and LinkedIn for Urbanism, Architecture, AI - Computation in AEC 2026
- Erasmus, Semester Abroad, DAAD Scholarship, Denmark 2023
- Participant, “University of Madrid, Student housing design”, Spain 2022
- Best Architecture Thesis of the year, GSOA, Greater Noida 2021
- Participant, “A Bench in Venice” design competition, N.P, UAE 2021
- Winner, Assembly building Design competition, Mumbai Development Authority 2020
- Volunteer Instructor for Rhinoceros, Grasshopper, and Revit for a class of 20 students 2020
- Volunteer- Smart City mission of the Indian Government, Meerut City 2020

Recent Projects:

- Facade automation tool in Rhino-Grasshopper 2026
- Open source projects on GitHub 2025-2026
- Elvefront residential units, automated floor plan workflows, Norway 2026
- Research and Automation frameworks in Fraunhofer, IBP, Germany 2025
- Speckle Life cycle assessment tool, Link IO, Copenhagen, Denmark- Sweden- Norway 2024
- Urban Sketcher tool- Framework development, Link IO, Copenhagen, Denmark- Sweden- Norway 2024
- Link EP tool extension- Energy frameworks extension, Link IO, Copenhagen, Denmark- Sweden- Norway 2024
- Breco / Segiwa- Digital factory automation projects, Germany 2024
- 5-star hotel projects, Dubai and China 2023-24
- Urban mixed-use development, Erfurt, Germany 2023
- Mixed use, Housing project, Barcelona, Spain 2023
- University of Madrid, Student housing design project, Madrid, Spain 2022-23
- Beach housing project, Valencia, Spain 2022-23
- Urban socio sustainability project, Zuid Limburg, Netherlands 2023

Open source projects developed:

- *Skills plugin for Computational designers (GitHub: https://github.com/Amanbh997/Claude-skills-for-Computational-Designers)*
  Your AI workflows do not know Computational design. This fixes that. It integrates 18 skills and 7 calculators, ranging from CD foundations, parametric - generative modelling, computational geometry, environmental simulation, optimization methods, data driven design, ML for AEC, etc.

- *Skills plugin for Urban Designers (GitHub: https://github.com/Amanbh997/Urban-Design-Skills-Claude)*
  Claude is powerful, but it doesn't natively think like an urban designer. The objective has been to change that and make it as a strong technical layer for the further extensions.

  You get a design assistant that actually knows the design principles, theories by more than 40 urban theorists, 5 international frameworks, what a livable block size is, what LEED requires, or how to stress-test a masterplan against real benchmarks.

- *Open-Clone* *(in process)*
- *AEC Scholar* *(https://github.com/Amanbh997/AEC-Scholar)*
- *AEC Knowledge Graph* *(https://github.com/Amanbh997/aec-knowledge-graph)*

Current ongoing experiments:

- *Digital Twin Cities*
  Investigating digital twin technology to simulate urban systems, with a focus to enhance real-time decision-making for sustainable and resilient city planning.

- *Applications of Computational Urbanism in Informal Settlements*
  Exploring computational models to address infrastructure, housing, and social equity challenges within urban informal settlements, with a goal of supporting sustainable community development.

- *Data-Driven Solutions for Gentrification Prediction and Mitigation*
  Researching advanced analytics to forecast and manage gentrification impacts, creating foundations for proactive, community-centered urban planning.

- *Urban and Architecture design automation frameworks*
  Researching automation frameworks for parametric and generative design within data-centric platforms for architecture and urban planning.

Social links:

LinkedIn

www.linkedin.com/in/abhinavbhardwaj-

Personal website

https://www.abhinavbhardwaj.com/

Portfolio

https://www.abhinavbhardwaj.com/

GitHub

https://github.com/Abhinavbwj

Instagram

https://www.instagram.com/abhinavbwj