

ARCHIT GOYAL

Computational Designer | Researcher

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PROFESSIONAL SUMMARY

Computational Designer and architect with 6+ years bridging design practice and technical implementation across architecture, manufacturing, and product design. Advanced proficiency in Rhino, Grasshopper, and parametric workflows, with hands-on experience building custom automation tools and generative design systems deployed in production environments. Published researcher in robotic fabrication (ACADIA 2024, 2025). Comfortable operating inside project teams to shape design outcomes, as well as building the tools that get teams there faster.

TECHNICAL SKILLS

Computational Design: Rhino, Grasshopper, parametric modeling, generative design, algorithm development, Rhino.Inside, Dynamo

Architectural & BIM Tools: Revit, ArchiCAD, AutoCAD, BIM workflows

Programming & Automation: Python, JavaScript, React, Node.js, Git, Claude, Excel vba, workflow automation, custom tool development

Digital Fabrication: Kuka 6-axis robotic arm, robotic toolpathing, robotic 3D printing, CNC routing, waterjet cutting, laser cutting, CNC knitting, additive manufacturing

Rendering & Visualization: Enscape, Lumion, Adobe Creative Suite, Midjourney, AI-driven rendering tools

Programming & Data: Python, algorithmic design, data parsing, Excel automation, PDF processing

PROFESSIONAL EXPERIENCE

Avalon International Aluminum, Portland, OR

Computational Designer | April 2025 – Present

- Built enterprise-grade 3D web configurator deployed to sales team, reducing order intake time by 30-60 minutes per order through automated parsing of customer specifications into structured data formats
- Developed ProdPrintPrep automation tool that reduced production sheet preparation time by 75%, consolidating heterogeneous project inputs (shop drawings, inventory PDFs, Excel data) into standardized print-ready stacks
- Created LabelMaker file-drop system that automated previously manual label generation workflow, enabling delegation from senior staff to shop floor operators and eliminating transcription errors
- Led frontend development and Contentful CMS setup for new company website, integrating iframe-embedded 3D configurator built on Rhino + Grasshopper logic
- Architected and deployed AVIT (Avalon Internal Tools), a centralized web platform consolidating departmental tools into single source of truth, improving cross-functional workflow coordination

DART Lab, University of Michigan, Ann Arbor, MI

Research Assistant, Computational Design | Nov 2023 – Dec 2024

- Designed and fabricated Vertical Wetland, an 8-foot robotically 3D-printed thermoplastic structure using Kuka 6-axis industrial robotic arm for urban vertical green systems research

- Co-authored research on robotic additive manufacturing published at ACADIA 2024 (Banff, Canada)
- Developed custom robotic toolpaths and material deposition strategies for large-scale additive manufacturing of functionally graded structures

The Busride Design Studio, Mumbai, India

Project Architect | Jan 2023 – June 2023 (concurrent with Argo_DesignLab)

- Designed multi-functional interior spaces integrating parametric workflows and material studies for residential and commercial projects
- Produced construction drawing sets (GFCs) coordinating with structural engineers and MEP consultants for luxury weekend homes

Argo_DesignLab, Mumbai, India

Founder & Project Lead | Feb 2019 – Aug 2023

- Founded and operated a design consultancy delivering architecture, interior design, and computational design services across 8+ projects
- Led Peeli Kothi residential project featured in Architectural Digest India and Volume Zero, integrating material research and regional vernacular design strategies
- Developed brand strategy and fabricated exhibition installations and kiosks for startup clients across Mumbai and Delhi markets
- Directed computational design workflows and material research projects spanning architecture, product design, and digital fabrication applications

Sameep Padora + Associates, Mumbai, India

Junior Architect | Nov 2018 – Jan 2019

- Prepared construction drawing sets (GFCs) for a high-rise residential project, coordinating documentation with structural and MEP consultants
- Contributed to the competition team developing conceptual design presentations for a government-funded public infrastructure project

EDUCATION

Master of Science in Digital and Material Technologies

Taubman College of Architecture & Urban Planning, University of Michigan, Ann Arbor, MI
Aug 2023 – Dec 2024 | GPA: 3.86

Bachelor of Architecture

Dr. Baliram Hiray College of Architecture, University of Mumbai, Mumbai, India
July 2013 – May 2018

PUBLICATIONS AND RESEARCH

- Gao, J., Merupu, D., Goyal, A., & Ahlquist, S. (2025). Pneuma-Bloom: Air-Driven 4D Textile Composites for Multi-Sensory Space Creation. ACADIA 2025.
- Gao, J., Aghaei Meibodi, M., Goyal, A., Li, Y., & Yan, C. (2024). Vertical Wetland: Robotic 3D Printing of Urban Vertical Green Systems for Biodiversity. ACADIA 2024. DOI: 10.52842/conf.acadia.2024.2.345