

“Shaping the Future Built Environment: Art, Technology, and Community Co-Creation with Artificial Intelligence, Virtual Reality, and Digital Fabrication”

This fall, Craft@Large will explore *Shaping the Future Build Environment* through a series of co-design workshops in the Cornell Tech MakerLAB. These workshops will then extend into the community, with hands-on sessions at partner sites across NYC. Together, artists, students, and community leaders will reimagine how new technologies can shape creative practice, collaboration, and public engagement.

Participants will explore how emerging technologies can expand artistic expression: computers generating design ideas (Artificial Intelligence), immersive environments for sculpting in three dimensions (Virtual Reality), and digital fabrication tools like 3D printers and laser cutters that bring those ideas into physical form.

Community Partners:

[RIVAA](#) | [Weill Cornell Simulation Center](#) | [ADAPT](#) | [Qyate](#) | [K-12 Initiative Cornell Tech](#) | [Urban Matters Inc.](#) | [Department of Physics and Astronomy Hunter College, CUNY](#)

Phase 1 – MakerLAB Co-Design (Sept–Oct)- Signup [Onboarding Form](#) to receive calendar invite

Sept-11th	Zoom Recording [4:30-5:30pm]	Kickoff & Inspiration Exchange – Introduce project goals, share AI/VR sculpture examples, Intros by partnering sites
Sept-17th	In Person [3:30-6:30pm]	- Creating Prompts: Pre work before we begin with Meshy.ai - Introduce partner site goals; brainstorm first connections - Intro to Meshy.ai: generate 2D sketches & text/image -to-3D models
Sept-24th	Zoom [4:30-6:00 pm]	Activity Form Link Guest Lecture by Nikolas Martelaro, Assistant Professor ,HCI Institute Carnegie Mellon University. “How designers can augment and accelerate their work with the use of AI” - Breakout groups → draft one “artifact idea” per partner site. - Troubleshooting past week’s exercise
Oct-1st	In Person [3:30-6:30pm]	Pre Workshop Activity - Gravity Sketch VR stations: sculpt forms, export meshes. - Workshop track: begin mapping which tool pipelines fit which site. - Community track: partner site liaisons join to give feedback.

Craft@Large – Fall 2025

[Onboarding Form](#) | [Slides](#) | [Reflection Form](#)

Oct-8th	Zoom [4:30-6:00 pm]	- Individual Reflections on AI/VR workshops so far - Draft workshop skeletons (learning goals, steps, materials) for organizations - Discuss accessibility & constraints for each site
Oct-15th	In Person [3:30-6:30pm]	- Gravity Sketch VR stations: sculpt forms, export meshes. - Hands-on: Intro to 3D printing: slicing basics, print time estimates, troubleshooting. - Print test pieces from both AI-generated + VR-sculpted models.
Oct-21st	Zoom [4:30-5:30 pm]	- Guest Lecture by Prof. Udt Gupta on the energy and environmental impact of AI . Recording
Oct-29th	In Person [3:30-6:30pm]	- Hands-on: Stations open: Meshy.ai, Gravity Sketch VR, 3D printing → each team rehearses using their chosen workflow. - Rehearsal of each team's on site sessions - Finalize materials & troubleshoot workflows for November workshops on partner sites.
Oct-31st		

Phase 2 – Off-Campus Workshop Delivery (Nov)

November 6th, Thursday	December 16th, Tuesday	
RIVAA Gallery Workshop	K-12	T.B.D.
Deliver the finalized workshop to community venues.		

Phase 3 – Exhibition & Wrap-Up (Dec 2nd)

Tools & Resources (for C@L 2025 Participants)

This workshop series can be completed entirely with free software and tools. Some participants may wish to try subscription-based or trial tools — that's optional. We recommend starting with free versions, then experimenting further if it feels useful for your design practice. We will use these tools in our in person workshops in the MakerLAB and will guide you through so no worries if you have never used them before.

AI Tools

- **ChatGPT (Free + Plus tier)** – text generation, ideation, critique, reflection.
- **Google Gemini (free tier)** – multimodal research and writing.
- **MS Copilot** – brainstorming and drafting (via Microsoft accounts).
- **Optional explorations:** Claude, Perplexity, DeepSeek – alternative AI assistants.
- **3D/Design-specific AI:** Meshy.ai, Shape-E (Google Colab), WeaverAI – generate 3D models; Stable Diffusion / DALL·E for 2D image prompts.

Graphic & 3D Design Tools

- **Figma** – free for students; collaborative 2D design and prototyping.
- **Gravity Sketch (VR)** – immersive 3D sculpting (used during in-person sessions).
- **[TinkerXR](#):** In-Situ, Reality-Aware CAD and 3D Printing
- **Blender (open source)** – powerful 3D modeling and rendering.
- **Tinkercad (free, browser-based)** – quick entry into 3D modeling and code-based design.

Software Development & Code-Based Design

- **VS Code (free)** – a popular Integrated Development Environment (IDE) that combines a code editor, debugger, and tools for building projects.
- **GitHub Copilot (free for students)** – AI-assisted coding companion.
- **Google AI Studio** – free platform for experimenting with AI workflows.

- **Optional IDEs** – *Cursor, Claude Code, Bolt*: these newer AI-integrated IDEs help with code generation, prototyping, and debugging.

IDE (*Integrated Development Environment*) = a “workbench” for coding that brings together a text editor, tools to run your code, and helpers like autocomplete or AI.

Fabrication Tools (MakerLAB access during sessions)

- **3D Printing** – FDM and resin printers.
- **Laser Cutting & Etching** – for 2D and 3D prototyping.
- **Vinyl Cutting, CNC, & hand tools** – extended prototyping.
- **Electronics Workbenches** – Arduino, sensors, and circuits.

Code Management

- **GitHub (free)** – version control and project sharing.

App / Project Deployment (Optional for advanced participants)

- **Vercel (Hobby plan, free)** – simple web/app deployment.
- **Glitch / Replit** – lightweight web-based alternatives.