Kexin Lu

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Computational designer with expertise in complex geometry optimization and polymer-based additive manufacturing. Specializes in developing frameworks that enable multi-scale structure optimization and programmable material properties, translating sophisticated design concepts into manufacturable solutions.

EXPERIENCE

OPT Industries, Inc.   **Sep 2021 – Present**
Senior Computational Designer, Creative Design for Additive Manufacturing   Medford, MA

- **Selected Design Portfolio**

- **Designed and Developed the First-ever 3D Printed Lashes Technology from Concept to Market Launch,** introducing new manufacturing file formats and securing patent-pending status for innovative fabrication methods.

- **Created Advanced Wearable Technology Solutions** by combining biomimetic design principles with digital engineering, producing high-performance footwear components and adaptive materials that attracted industry partnerships.

- **Developed Decorative Architectural Material Systems** using computational design methods, with a successful exhibition at Design Post Cologne generating new market opportunities.

- **Built Custom Design Tools in Grasshopper C# Implementing Houdini-Style Attribute Mapping Functionality,** enabling advanced geometry processing and parametric control that streamlined the team's design workflow.

Morphing Matter Lab (CMU HCII)   **Sep 2019 – Aug 2021**
Research Assistant   Pittsburgh, PA

- **Developed Novel Real-Time Visualization System for Hydrogel-Based Shape-Changing Interfaces,** advancing rapid prototyping capabilities for underwater morphing structures and publishing findings in "Hydrogel-based DIY Underwater Morphing Artifacts."

- **Introduced a Generative Design Pipeline for Customizable Facial Prostheses,** enabling digital fabrication of transformative prosthetic makeup. Research published as "Morphace" and recognized with honorable mention in Fast Company's 2022 Innovation by Design Awards.

- **Created computational methodology for texture mapping on developable surfaces,** introducing new approaches for designing dynamic adaptive materials through "Inverse Design Tool for Asymmetrical Self-Rising Surfaces with Color Texture."

China Architecture Design & Research Group   **Mar 2017 – June 2018**
BIM Technician, Generative Design and Parametric Modeling   Beijing, CHINA

- **Supported architectural design teams through multiple project phases (SD, DD, CD),** providing technical assistance for both urban planning and building-scale projects.

- **Created parametric facade systems and BIM models,** generating comprehensive construction documentation for commercial developments.

- **Assisted with material specification coordination and documentation,** helping maintain smooth progression through construction phases.

M.O.D.E.S Studio   **June 2015 – June 2019**
Associate Designer   Beijing, CHINA

- Implemented innovative computational design solutions for **"Yan" Ancestral Hall**, translating traditional architectural elements into precise digital fabrication instructions.

- Developed modular design system for the **"Plug-in Life"** project, creating scalable manufacturing solutions that balanced design innovation with production efficiency.

EDUCATION

Carnegie Mellon University   **Aug 2019 - Aug 2021**
Master of Science in Computational Design   Pittsburgh, PA

- Admission with Merit-Based Scholarship
- Awards: Frank-Ratchye STUDIO for Creative Inquiry Stay at Home Scholarship(during the pandemic)

SCI-ARC Initiative China & Tsinghua Architecture Summer School   **July 2018 - Aug 2018**
Advanced Digital Design & Parametric Design Workshop   Beijing, CHINA

- Specialized in computational design, digital fabrication, 3D printing, and interactive robotics
- Final work recognized with outstanding presentation award and featured in program showcase

Beijing University of Technology   **Sep 2013 - July 2018**
Bachelor of Architecture   Beijing, CHINA

- Teaching Assistant of the Parametric Design (Rhino and Grasshopper) course

SKILLS

- **Computational Design:** Python, C#, Grasshopper scripting
- **3D Modeling & Simulation:** Rhino, Houdini, C4D, Blender, ZBrush
- **Architecture & Engineering:** Revit, SketchUp, BIM systems, AutoCAD
- **Visualization:** Keyshot, Octane, V-Ray, Lumion, Substance Painter, Adobe Creative Suite
- **AI & Digital Tools:** Generative AI prompting (image/video/code), Adobe Suite, Microsoft Office, GSuite