Rosalie Lin
Materials & Textiles Innovation

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EDUCATION

Harvard University | Cambridge, MA   *Aug 2020 - May 2022*
Master of Design in Technology, Computational design, Digital Fabrication

National Cheng Kung University | Tainan, Taiwan   *Sep 2013 - Jul 2018*
Bachelor of Science in Industrial Design

SKILLS

3D/2D CAD: Solidworks • Fusion 360 • Rhino • Grasshopper • KeyShot • Adobe Creative Suite
Prototyping: 3D printing • CNC machining • molding/casting • laser cutting • digital embroidery/weaving
Research: Materials & processes selection • user studies • data collection & analysis • cross-disciplinary
Problem Solve: Design of Experiments • statistical analysis • failure analysis • FEA simulation • feasibility study
Manufacturing: Injection molding • compression molding • metal machining, stamping, and extrusion

WORK EXPERIENCE

Material Design Engineer, Accenture Labs (San Francisco, CA)   *Sep 2022 - Present*

- Developed re-moldable textile system for soft goods and wearables by leveraging thermoplastics and technical embroidery, creating concepts through computational CAD, prototyping, and mechanical validation.

- Implemented full factorial Design of Experiments (DOE) to systematically optimize textile fabrication metrics across stiffness, stretchability, and shape-retention through statistical analysis by Python.

- Designed and built customized fixtures for tensile testing machinery through FDM 3D printing and COTS parts for textile mechanical characterization using Fusion 360 and GD&T.

- Scaled wooden actuator prototype by sourcing cost-effective vendors, creating manuals to communicate requirements, and conducting failure analysis to identify root causes for manufacturing improvements.

- Led cross-functional engineering team to design and build automated testing setups for wooden actuator failure analysis by micro force measurement and image recognition within 3 months.

Product Design Engineer, Advanced International Multitech (Kaohsiung, Taiwan)   *Jan 2021 - Jul 2021*

- Developed a multi-stiffness woven carbon fiber furniture through material research (prototyping, testing, and selection), computational CAD, FEA simulations, and full scale prototyping.

- Engineered mechanical performance of carbon fiber by optimizing braiding factors with INSTRON bending tests.

- Conducted FEA by ANSYS simulations to assess mechanical deflection and provide improvement guidelines.

- Built a parametric NURBS 3D modeling design tool by Grasshopper and Rhino with 9 parameters to streamline 3D CAD prototyping by end-users and stakeholders, facilitating design decision process.

- Collaborated with machine shop to customize weaving machine with a tension-adjusting gear set through CNC machining to allow operation of high-strength materials.

Manufacturing Design Engineer, Freetrend (Ho Chi Minh City, Vietnam)   *Feb 2019 - Jun 2019*

- Developed novel footwear manufacturing techniques by applying knowledge of soft good materials (fabric, foam, synthetic, adhesive), soft good assembly processes (compression molding, injection molding, lamination, stitching), and jig designs to enhance cosmetic, functionality, and production efficiency.

- Collaborated with cross-functional engineering, soft good prototyping shop, quality control team, and manufacturing line to drive product development iterations and ensure Design for Manufacturability and Assembly (DFMA).

Textile Design Researcher, MIT Media Lab (Cambridge, MA)   *Aug 2021 - Sep 2022*

- Developed an actuated puffer textile system by identifying optimal combinations of fibers, fabrics, and programmed embroidery patterns to create novel soft goods products and wearables.

- Established a library of material primitives by characterizing embroidery parameters and resulting form to inform design guidelines for various applications.

- Received four international design awards, including the iF, Red Dot, A' Design, and Core 77 awards.

PUBLICATIONS

2023 'FibeRobo: Fabricating 4D Fiber Interfaces by Continuous Drawing of Temperature Tunable Liquid Crystal Elastomers', Proceedings of the Annual ACM Symposium on UIST, 2023

2023 A' Design Award - Award Winning Designs Yearbook 2023, DesignerPress, Italy

2023 Red Dot Award - Award Winning Designs Yearbook 2023

AWARDS

2023 iF Design Award, iF Design Award: Product, Textiles/Walls/Floor, GERMANY

2023 Red Dot Award: Design Concept, GERMANY

2023 A' Design Award, Iron A' Design Award in Textile, Textures, Patterns and Cloth Design Category, ITALY

2023 Core77 Design Awards, Student Notable - Lifestyle Accessories Award, USA

2023 A' Design Award, Iron A' Design Award in Industrial Design Category, ITALY

EXHIBITIONS

2022 'Cambridge Science Festival', MIT Museum, CAMBRIDGE, MA/USA

2018 'Global Grad Show, Dubai Design Week', Dubai Design District, DUBAI/UAE

2018 'Above 1000C, Milan Design Week', Ventura Future, MILAN/ITALY

2017 'Behind The Design', Songshan Cultural and Creative Park, TAIPEI/TAIWAN

TALKS

2023 'International Women's Day: Smart Fabric', SAN FRANCISCO, CA/USA

2023 'SF Design Week: Emerging Technology for Inclusive Design and Product', SAN FRANCISCO, CA/USA